



100H94~2.TXT
SEQUENCE LISTING

<110> HOLM, Jens
IPSEN, Henrik
LARSEN, Jorgen N.
SPANGFORT, Michael D.

<120> Novel mutant allergens

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<141> 2001-11-15

<150> US 60/298,170
<151> 2001-06-14

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Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Gly Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
 50 55 60

Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
 65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
 85 90 95

Ser Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly Ser
 100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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85 90 95Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
100 105 110Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
85 90 95

Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Ser Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Pro Ile Gly Asp Thr Leu Glu
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
85 90 95

Ser Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
50 55 60

Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Pro Ile Gly Asp Thr Leu Glu
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Ser Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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Lys Ala Glu Gln Val Glu Ala Ser Lys Glu Met Gly Glu Thr Leu Leu
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 Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
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 Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
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Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
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Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile
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Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
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Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
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Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
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48

100H94~2.TXT

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Arg Gln Met Arg Thr Val Thr Thr Ile Arg Met Gln Gly Gly Cys Gly	
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tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg	144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu	
35 40 45	
gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat	192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp	
50 55 60	
tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca cag ggt att	240
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile	
65 70 75 80	
gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac	288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr	
85 90 95	
gtt gca gaa gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt	336
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly	
100 105 110	
atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt	384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg	
115 120 125	
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc	432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	
130 135 140	
aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa	480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln	
145 150 155 160	
cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt	528
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly	
165 170 175	
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg	576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp	
180 185 190	
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc	624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile	
195 200 205	
gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc	666
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu	
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100H94~2.TXT
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
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Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
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Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile
65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
85 90 95

Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
145 150 155 160

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

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cga caa atg gaa act gtc act ccc att cgt atg caa gga ggc tgg ggt 96
Arg Gln Met Glu Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
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tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg 144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
35 40 45

gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
50 55 60

tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca cag ggt att 240
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile
65 70 75 80

gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac 288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
85 90 95

gtt gca cag gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt 336
Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
100 105 110

atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt 384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
115 120 125

gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc 432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa 480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
145 150 155 160

cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt 528
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac att tgg 576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc 624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile

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195

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35 40 45	

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp	
50 55 60	

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile	
65 70 75 80	

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr	
85 90 95	

Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly	
100 105 110	

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg	
115 120 125	

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	
130 135 140	

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln	
145 150 155 160	

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly	
165 170 175	

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp	
180 185 190	

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile	
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cga caa atg cag act gtc act ccc att cgt atg caa gga ggc tgt ggt	96
Arg Gln Met Gln Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly	
20 25 30	
tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg	144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu	
35 40 45	
gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat	192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp	
50 55 60	
tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca gaa ggt att	240
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile	
65 70 75 80	
gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac	288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr	
85 90 95	
gtt gca gaa gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt	336
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly	
100 105 110	

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atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt		384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg		
115 120 125		
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc		432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile		
130 135 140		
aaa gat tta gac gca ttc cgt cat tat gat ggc cag aca atc att caa		480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln		
145 150 155 160		
cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt		528
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly		
165 170 175		
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg		576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp		
180 185 190		
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc		624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile		
195 200 205		
gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc		666
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu		
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu		
35 40 45		
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp		
50 55 60		
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile		
65 70 75 80		
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr		
85 90 95		
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly		
100 105 110		
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg		
115 120 125		

100H94~2.TXT
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
145 150 155 160

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
195 200 205

Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
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cga caa atg cga act gtc act acc att cgt atg caa gga ggc tgt ggt 96
Arg Gln Met Arg Thr Val Thr Ile Arg Met Gln Gly Gly Cys Gly

100H94~2.TXT

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25

30

tca	tgt	tgg	gct	ttc	tct	ggt	gtt	gcc	gca	act	gaa	tca	gct	tat	ttg		144
Ser	Cys	Trp	Ala	Phe	Ser	Gly	Val	Ala	Ala	Thr	Glu	Ser	Ala	Tyr	Leu		
35							40					45					
gct	gtg	cgt	aat	caa	tca	ttg	gat	ctt	gct	gaa	caa	gaa	tta	gtc	gat		192
Ala	Val	Arg	Asn	Gln	Ser	Leu	Asp	Leu	Ala	Glu	Gln	Glu	Leu	Val	Asp		
50						55				60							
tgt	gct	aac	caa	cac	ggt	tgt	cat	ggt	gat	acc	att	cca	cgt	ggt	att		240
Cys	Ala	Asn	Gln	His	Gly	Cys	His	Gly	Asp	Thr	Ile	Pro	Arg	Gly	Ile		
65				70				75					80				
gaa	tac	atc	caa	cat	aat	ggt	gtc	gtc	caa	gaa	agc	tac	tat	cga	tac		288
Glu	Tyr	Ile	Gln	His	Asn	Gly	Val	Val	Gln	Glu	Ser	Tyr	Tyr	Arg	Tyr		
85							90					95					
gtt	gca	gaa	gaa	caa	tca	tgc	cga	cga	cca	aat	gca	caa	cgt	ttc	ggt		336
Val	Ala	Glu	Glu	Gln	Ser	Cys	Arg	Arg	Pro	Asn	Ala	Gln	Arg	Phe	Gly		
100						105						110					
atc	tca	aac	tat	tgc	caa	att	tac	cca	cca	aat	gta	aac	aaa	att	cgt		384
Ile	Ser	Asn	Tyr	Cys	Gln	Ile	Tyr	Pro	Pro	Asn	Val	Asn	Lys	Ile	Arg		
115						120						125					
gaa	gct	ttg	gct	caa	acc	cac	agc	gct	att	gcc	gtc	att	att	ggc	atc		432
Glu	Ala	Leu	Ala	Gln	Thr	His	Ser	Ala	Ile	Ala	Val	Ile	Ile	Gly	Ile		
130						135					140						
aaa	gat	tta	gac	gca	ttc	cgt	cat	tat	gat	ggc	cag	aca	atc	att	caa		480
Lys	Asp	Leu	Asp	Ala	Phe	Arg	His	Tyr	Asp	Gly	Gln	Thr	Ile	Ile	Gln		
145						150					155				160		
cag	gat	aat	ggt	tac	caa	acc	aac	tat	cac	gct	gtc	aac	att	gtt	ggt		528
Gln	Asp	Asn	Gly	Tyr	Gln	Thr	Asn	Tyr	His	Ala	Val	Asn	Ile	Val	Gly		
165						170						175					
tac	agt	aac	gca	caa	ggt	gtc	gat	tat	tgg	atc	gta	cga	aac	agt	tgg		576
Tyr	Ser	Asn	Ala	Gln	Gly	Val	Asp	Tyr	Trp	Ile	Val	Arg	Asn	Ser	Trp		
180						185						190					
gat	acc	aat	tgg	ggt	gat	aat	ggt	tac	ggt	tat	ttt	gct	gcc	aac	atc		624
Asp	Thr	Asn	Trp	Gly	Asp	Asn	Gly	Tyr	Gly	Tyr	Phe	Ala	Ala	Asn	Ile		
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gat	ttg	atg	atg	att	gaa	gaa	tat	cca	tat	gtt	gtc	att	ctc			666	
Asp	Leu	Met	Met	Ile	Glu	Glu	Tyr	Pro	Tyr	Val	Val	Ile	Leu				
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20 25 30Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
35 40 45

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50 55 60

Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
85 90 95

Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
145 150 155 160

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
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cga caa atg gaa act gtc act ccc att cgt atg caa gga ggc tgg ggt 96
Arg Gln Met Glu Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
20 25 30

tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg 144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
35 40 45

gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
50 55 60

tgt gct aac caa cac ggt tgt cat ggt gat acc att cca cgt ggt att 240
Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
65 70 75 80

gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac 288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
85 90 95

gtt gca gaa gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt 336
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
100 105 110

atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt 384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
115 120 125

gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc 432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

aaa gat tta gac gca ttc cgt cat tat gat ggc cag aca atc att caa 480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
145 150 155 160

gaa gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt 528
Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg 576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc 624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
195 200 205

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100H94~2.TXT
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
35 40 45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
50 55 60

Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
85 90 95

Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
145 150 155 160

Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
195 200 205

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100H94~2.TXT

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cga caa atg cag act gtc act ccc att cgt atg caa gga ggc tgt ggt	96
Arg Gln Met Gln Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly	
20 25 30	
tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg	144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu	
35 40 45	
gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat	192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp	
50 55 60	
tgt gct aac caa cac ggt tgt cat ggt gat acc att cca cgt ggt att	240
Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile	
65 70 75 80	
gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac	288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr	
85 90 95	
gtt gca cag gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt	336
Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly	
100 105 110	
atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt	384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg	

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115	120	125	
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc			
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile			
130	135	140	432
aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa			
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln			
145	150	155	160
gaa gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt			
Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly			
165	170	175	528
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg			
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp			
180	185	190	576
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc			
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile			
195	200	205	624
gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc			
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu			
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu		
35	40	45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp		
50	55	60

Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile			
65	70	75	80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr		
85	90	95

Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly		
100	105	110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg		
115	120	125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile		
130	135	140

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Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
145 150 155 160

Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

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195 200 205

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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile
 65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95

Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly
 100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Glu
 115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
 145 150 155 160

Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
 165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
 180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
 195 200 205

Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
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cga caa atg cga act gtc act acc att cgt atg caa gga ggc tgt ggt 96
 Arg Gln Met Arg Thr Val Thr Ile Arg Met Gln Gly Gly Cys Gly
 20 25 30

tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg 144
 Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45

gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
 Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca cag ggt att 240
 Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile
 65 70 75 80

gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac 288
 Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95

gtt gca gaa gaa caa tca tgc cga cga cca aat gca gat cgt ttc ggt 336
 Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly
 100 105 110

atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cag 384
 Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Gln

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115	120	125	
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc			
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile			
130	135	140	432
aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa			
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln			
145	150	155	160
cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt			
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly			
165	170	175	528
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg			
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp			
180	185	190	576
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc			
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile			
195	200	205	624
gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc			
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu			
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu		
35	40	45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp		
50	55	60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile			
65	70	75	80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr		
85	90	95

Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly		
100	105	110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Gln		
115	120	125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile		
130	135	140

100H94~2.TXT

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
145 150 155 160

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

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195 200 205

Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
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35 40 45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
50 55 60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile
65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
85 90 95

Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly
100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Glu
115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
145 150 155 160

Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Phe
180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
195 200 205

Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
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cga caa atg cga act gtc act acc att cgt atg caa gga ggc tgt ggt 96
Arg Gln Met Arg Thr Val Thr Ile Arg Met Gln Gly Cys Gly
20 25 30

tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg 144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
35 40 45

gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
50 55 60

tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca cag ggt att 240
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile
65 70 75 80

gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac 288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr

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95

gtt gca gaa gaa caa tca tgc cga cga cca aat gca gat cgt ttc ggt	336
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly	
100 105 110	
atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cag	384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Gln	
115 120 125	
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc	432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	
130 135 140	
aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa	480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln	
145 150 155 160	
cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt	528
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly	
165 170 175	
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt ttt	576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Phe	
180 185 190	
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc	624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile	
195 200 205	
gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc	666
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu	
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile
 65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95

Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly
 100 105 110

100H94~2.TXT

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Gln
115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
145 150 155 160

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Phe
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				20				25					30		
Lys	Pro	Phe	Gln	Leu	Glu	Ala	Leu	Phe	Glu	Ala	Asn	Gln	Asn	Ser	Ala
					35			40				45			
Thr	Ala	Lys	Ile	Glu	Ile	Lys	Ala	Ser	Ile	Asp	Gly	Leu	Ser	Val	Asp
					50			55				60			
Val	Pro	Gly	Ile	Asp	Pro	Asn	Ala	Cys	His	Tyr	Met	Asn	Cys	Pro	Leu
					65			70				75			80

100H94~2.TXT
val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

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ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att ggc cgt ggt 96
Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly
20 25 30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala

35	40	45	
aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat			192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp			
50	55	60	
gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg			240
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu			
65	70	75	80
gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa			288
Val Asn Gly Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys			
85	90		95
att gca cca aaa tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt			336
Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly			
100	105	110	
gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag			384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln			
115	120	125	
gat			387
Asp			

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Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly		
20	25	30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala		
35	40	45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp		
50	55	60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu			
65	70	75	80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys		
85	90	95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly		
100	105	110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln		
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Asp

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 1 5 10 15

ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att ggc cgt ggt 96
 Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly
 20 25 30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
 35 40 45

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta gaa gtt gat 192
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60

gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg 240
 Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
 65 70 75 80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa 288
 Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

100H94~2.TXT
 att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
 Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110
 gat aat ggt gtt ttg gcc tgg gct att gct act cat gct aaa atc cag 384
 Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
 115 120 125
 gat 387
 Asp

<210> 40
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 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
 1 5 10 15
 Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly
 20 25 30
 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
 35 40 45
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60
 Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
 65 70 75 80
 Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95
 Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110
 Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
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<210> 41
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Asp	Gln	Val	Asp	Val	Lys	Asp	Cys	Ala	Asn	His	Glu	Ile	Lys	Glu	Val		
1																15	
ttg	gta	cca	gga	tgc	cat	ggt	aac	gaa	cca	tgt	atc	att	ggc	cgt	ggt		96
Leu	Val	Pro	Gly	Cys	His	Gly	Asn	Glu	Pro	Cys	Ile	Ile	Gly	Arg	Gly		
20																30	
aaa	cca	ttc	caa	ttg	gaa	gct	tta	ttc	gaa	gcc	aat	caa	aac	tca	aaa		144
Lys	Pro	Phe	Gln	Leu	Glu	Ala	Leu	Phe	Glu	Ala	Asn	Gln	Asn	Ser	Lys		
35																45	
aca	gct	aaa	att	gaa	atc	aaa	gct	tca	atc	gat	ggt	tta	agc	gtt	gat		192
Thr	Ala	Lys	Ile	Glu	Ile	Lys	Ala	Ser	Ile	Asp	Gly	Leu	Ser	Val	Asp		
50																60	
gtt	ccc	ggt	atc	gat	cca	aat	gca	tgc	cat	tat	atg	aac	tgt	cca	ttg		240
Val	Pro	Gly	Ile	Asp	Pro	Asn	Ala	Cys	His	Tyr	Met	Asn	Cys	Pro	Leu		
65																80	
gtt	aac	gga	caa	caa	tat	gat	att	aaa	tat	aca	tgg	aat	gtt	cca	aaa		288
Val	Asn	Gly	Gln	Gln	Tyr	Asp	Ile	Lys	Tyr	Thr	Trp	Asn	Val	Pro	Lys		
85																95	
att	gca	cca	aac	tct	gaa	aat	gtt	gtc	gtc	act	gtt	aaa	gtt	ttg	ggt		336
Ile	Ala	Pro	Asn	Ser	Glu	Asn	Val	Val	Val	Thr	Val	Lys	Val	Leu	Gly		
100																110	
gat	aat	ggt	gtt	ttg	gcc	tgt	gct	att	gct	act	cat	gct	aaa	atc	cag		384
Asp	Asn	Gly	Val	Leu	Ala	Cys	Ala	Ile	Ala	Thr	His	Ala	Lys	Ile	Gln		
115																125	
gat																	387
Asp																	

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100H94~2.TXT

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 42

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

Asp

<210> 43

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<212> DNA

<213> Dermatophagoides pteronyssinus

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 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
 1 5 10 15

ttg gta cca gga tgc cat ggt tca gaa cca tgt atc att ggc cgt ggt 96
 Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile Gly Arg Gly
 20 25 30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
 35 40 45

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat 192
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
 50 55 60

gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg 240
 Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
 65 70 75 80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa 288
 Val Asn Gly Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
 Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110

gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag 384
 Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
 115 120 125

gat
 Asp 387

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 <213> Dermatophagoides pteronyssinus

<400> 44

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
 1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile Gly Arg Gly
 20 25 30

100H94~2.TXT
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50 55 60
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
65 70 75 80
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

Asp

<210> 45
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Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val		
1 5 10 15		
ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att ggc cgt ggt		96
Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly		
20 25 30		
aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg		144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala		
35 40 45		
aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat		192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp		
50 55 60		
gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg		240
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu		
65 70 75 80		
gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa		288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys		
85 90 95		
att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt		336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly		
100 105 110		
gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag		384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln		
115 120 125		
gat		387
Asp		

<210> 46		
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Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val		
1 5 10 15		
Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly		
20 25 30		
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala		
35 40 45		
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp		
50 55 60		
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu		
65 70 75 80		
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys		
85 90 95		

100H94~2.TXT

Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
 115 120 125

Asp

<210> 47
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<400> 47
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 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
 1 5 10 15

ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt 96
 Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
 20 25 30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
 35 40 45

100H94~2.TXT

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat	192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp	
50 55 60	
gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg	240
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu	
65 70 75 80	
gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa	288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys	
85 90 95	
att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt	336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly	
100 105 110	
gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cgc	384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg	
115 120 125	
gat	387
Asp	

<210> 48

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 48

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val

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5

10

15

Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly

20

25

30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala

35

40

45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp

50

55

60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu

65

70

75

80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys

85

90

95

Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly

100

105

110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg

115

120

125

Asp

100H94~2.TXT

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Asp	Gln	Val	Asp	Val	Lys	Asp	Cys	Ala	Asn	His	Glu	Ile	Lys	Glu	Val	
1					5				10				15			

ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt

Leu	Val	Pro	Gly	Cys	His	Gly	Asn	Glu	Pro	Cys	Ile	Ile	His	Ser	Gly	96
20					25						30					

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg

Lys	Pro	Phe	Gln	Leu	Glu	Ala	Leu	Phe	Glu	Ala	Asn	Gln	Asn	Ser	Ala	144
35					40					45						

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat

Thr	Ala	Lys	Ile	Glu	Ile	Lys	Ala	Ser	Ile	Asp	Gly	Leu	Ser	Val	Asp	192
50					55				60							

gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg

Val	Pro	Gly	Ile	Asp	Pro	Asn	Ala	Cys	Asn	Tyr	Met	Lys	Cys	Pro	Leu	240
65					70				75			80				

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa

Val	Asn	Gly	Gln	Tyr	Asp	Ile	Lys	Tyr	Thr	Trp	Asn	Val	Pro	Lys	288
85					90						95				

att gca cca aaa tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt

Ile	Ala	Pro	Lys	Ser	Glu	Asn	Val	Val	Val	Thr	Val	Lys	Val	Leu	Gly	336

100 105 110
gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag 384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

gat 387
Asp

<210> 50
<211> 129
<212> PRT
<213> Dermatophagoides pteronyssinus
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Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
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Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

Asp

<210> 51
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1					5				10				15			

ttg	gta	cca	gga	tgc	cat	ggt	aac	gaa	cca	tgt	atc	att	cat	agc	ggt	96
Leu	Val	Pro	Gly	Cys	His	Gly	Asn	Glu	Pro	Cys	Ile	Ile	His	Ser	Gly	
20					25						30					

aaa	cca	ttc	caa	ttg	gaa	gct	tta	ttc	gaa	gcc	aat	caa	aac	tca	gcg	144
Lys	Pro	Phe	Gln	Leu	Glu	Ala	Leu	Phe	Glu	Ala	Asn	Gln	Asn	Ser	Ala	
35					40						45					

aca	gct	aaa	att	gaa	atc	aaa	gct	tca	atc	gat	ggt	tta	gaa	gtt	gat	192
Thr	Ala	Lys	Ile	Glu	Ile	Lys	Ala	Ser	Ile	Asp	Gly	Leu	Glu	Val	Asp	
50					55					60						

gtt	ccc	ggt	atc	gat	cca	aat	gca	tgc	aac	tat	atg	aaa	tgt	cca	ttg	240
Val	Pro	Gly	Ile	Asp	Pro	Asn	Ala	Cys	Asn	Tyr	Met	Lys	Cys	Pro	Leu	
65					70					75				80		

gtt	aac	gga	caa	caa	tat	gat	att	aaa	tat	aca	tgg	aat	gtt	cca	aaa	288
Val	Asn	Gly	Gln	Gln	Tyr	Asp	Ile	Lys	Tyr	Thr	Trp	Asn	Val	Pro	Lys	
					85				90				95			

att	gca	cca	aac	tct	gaa	aat	gtt	gtc	gtc	act	gtt	aaa	gtt	ttg	ggt	336
Ile	Ala	Pro	Asn	Ser	Glu	Asn	Val	Val	Val	Thr	Val	Lys	Val	Leu	Gly	
					100				105			110				

gat	aat	ggt	gtt	ttg	gcc	tgt	gct	att	gct	act	cat	gct	aaa	atc	cag	384
Asp	Asn	Gly	Val	Leu	Ala	Cys	Ala	Ile	Ala	Thr	His	Ala	Lys	Ile	Gln	
					115				120			125				

gat
 Asp

387

<210> 52
 <211> 129
 <212> PRT

<213> Dermatophagoides pteronyssinus

<400> 52

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
1 5 10 15Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
20 25 30Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65 70 75 80Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

Asp

<210> 53

<211> 387

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<213> Dermatophagoides pteronyssinus

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gat caa gtc gat gtc aaa gat tgt gcc aat cat gaa atc aaa gaa gtt 48
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
1 5 10 15

ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt 96
Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
20 25 30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta gaa gtt gat 192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg 240
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65 70 75 80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa 288
Val Asn Gly Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag 384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

gat 387
Asp

<210> 54
<211> 129
<212> PRT
<213> Dermatophagoides pteronyssinus

<400> 54
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45

100H94~2.TXT

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

Asp

<210> 55
<211> 387
<212> DNA
<213> Dermatophagoides pteronyssinus

<220>
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<222> (1)..(387)

<220>
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<222> (43)..(45)

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<222> (142)..(144)

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<222> (220)..(222)

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<222> (298)..(300)

<220>
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<222> (382)..(384)

<400> 55

100H94~2.TXT

gat caa gtc gat gtc aaa gat tgt gcc aat cat gaa atc aaa gaa gtt	48
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val	
1 5 10 15	
ttg gta cca gga tgc cat ggt tca gaa cca tgt atc att cat agc ggt	96
Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Ser Gly	
20 25 30	
aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg	144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala	
35 40 45	
aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat	192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp	
50 55 60	
gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg	240
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu	
65 70 75 80	
gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa	288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys	
85 90 95	
att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt	336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly	
100 105 110	
gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag	384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln	
115 120 125	
gat	387
Asp	

<210> 56
<211> 129
<212> PRT
<213> Dermatophagoides pteronyssinus

<400> 56

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val	
1 5 10 15	
Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Ser Gly	
20 25 30	
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala	
35 40 45	
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp	
50 55 60	
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu	
65 70 75 80	
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys	
85 90 95	

100H94~2.TXT
Ile Ala Pro Asn Ser Glu Asn Val Val Val Val Thr Val Lys Val Leu Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

Asp

<210> 57
<211> 387
<212> DNA
<213> Dermatophagoides pteronyssinus

<220>
<221> CDS
<222> (1)..(387)

<220>
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<222> (70)..(72)

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<222> (142)..(144)

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<222> (244)..(246)

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<222> (298)..(300)

<220>
<221> mutation
<222> (382)..(384)

<400> 57
gat caa gtc gat gtc aaa gat tgt gcc aat cat gaa atc aaa aaa gtt 48
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1 5 10 15

ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt 96
Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
20 25 30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat 192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp

100H94~2.TXT

50	55	60	
gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg			
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu			240
65	70	75	80
gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa			
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys			288
85	90		95
att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt			
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly			336
100	105	110	
gat aat ggt gtt ttg gcc tgg gct att gct act cat gct aaa atc cag			
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln			384
115	120	125	
gat			387
Asp			

<210> 58

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 58

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val			
1	5	10	15

Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly		
20	25	30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala		
35	40	45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp		
50	55	60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu			
65	70	75	80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys		
85	90	95

Ile Ala Pro Asn Ser Glu Asn Val Val Thr Val Lys Val Leu Gly		
100	105	110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln		
115	120	125

Asp

<210> 59

<211> 861

100H94~2.TXT

<212> DNA
<213> *Phleum pratense*

<220>
<221> CDS
<222> (1)..(861)

<220>
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<222> (133)..(135)

<220> mutation
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<222> (664)..(666)

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<222> (728)..(730)

<220>
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<222> (760)..(762)

<400> 59
gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

48

tac acc ccc gcc acc ccc gcc gaa ccg gcc gga gca gag cca gca ggt
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

96

aag	gcg	acg	acc	gag	gag	cag	aag	ctg	atc	gag	aag	aaa	aac	gcc	ggc
Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	Lys	Lys	Asn	Ala	Gly
35				40							45				

144

ttc	aag	gcg	gcc	ttg	gcc	gct	gcc	gcc	gac	gtc	ccg	cca	gcg	gac	aag
Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys
50				55						60					

192

tac	agg	acg	ttc	gtc	gca	acc	ttc	ggc	gcg	gcc	tcc	aac	aag	gcc	ttc
Tyr	Arg	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe
65				70					75						80

240

gag gag ggc ctc tcg ggc gag ccc aag ggc gcc gaa tcc agc tcc
 Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser
 85 90 95

288

aag	gcc	gca	ctc	acc	tcc	aag	ctc	gac	gcc	gcc	tac	aag	ctc	gcc	tac
Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr
100								105						110	

336

aag	aca	gcc	gag	ggc	gcg	acg	cct	gag	gcc	aag	tac	gac	gcc	tac	gtc
Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val
115							120							125	

384

gcc acc gta agc agc gcg ctc cgc atc atc atc gcc ggc acc ctc gag gtc
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

432

100H94~2.TXT

cac	gcc	gtc	aag	ccc	gcg	gcc	gag	gag	gtc	aag	gtc	atc	ccc	gcc	ggc		480
His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	Val	Ile	Pro	Ala	Gly		
145				150					155					160			
gag	ctg	cag	gtc	atc	gag	aag	gtc	gac	gcc	gcc	ttc	aag	gtc	gct	gcc		528
Glu	Leu	Gln	Val	Ile	Glu	Lys	Val	Asp	Ala	Ala	Phe	Lys	Val	Ala	Ala		
				165				170					175				
acc	gcc	gcc	aac	gcc	gcc	ccc	gcc	aac	gac	aag	att	acc	gtc	ttc	gag		576
Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	Asp	Lys	Ile	Thr	Val	Phe	Glu		
			180					185					190				
gcc	gcc	ttc	aac	gac	gcc	atc	aag	gcg	agc	acg	ggc	ggc	gcc	tac	gag		624
Ala	Ala	Phe	Asn	Asp	Ala	Ile	Lys	Ala	Ser	Thr	Gly	Gly	Ala	Tyr	Glu		
		195				200					205						
agc	tac	aag	ttc	atc	ccc	gcc	ctg	gag	gcc	gcc	gtc	aag	aaa	gcc	tac		672
Ser	Tyr	Lys	Phe	Ile	Pro	Ala	Leu	Glu	Ala	Ala	Val	Lys	Lys	Ala	Tyr		
		210			215						220						
gcc	gcc	acc	gtc	gcc	acc	gcg	ccg	gag	gtc	aag	tac	act	gtc	ttt	gag		720
Ala	Ala	Thr	Val	Ala	Thr	Ala	Pro	Gl	Val	Lys	Tyr	Thr	Val	Phe	Glu		
		225			230					235				240			
acc	gca	gaa	aaa	aag	gcc	atc	acc	gcc	atg	tcc	gaa	gca	aaa	aag	gct		768
Thr	Ala	Glu	Lys	Lys	Ala	Ile	Thr	Ala	Met	Ser	Glu	Ala	Lys	Lys	Ala		
		245						250					255				
gcc	aag	ccc	gcc	gcc	gct	gcc	acc	gcc	acc	gca	acc	gcc	gcc	gtt	ggc		816
Ala	Lys	Pro	Ala	Ala	Ala	Ala	Thr	Ala	Thr	Ala	Thr	Ala	Ala	Ala	Val	Gly	
			260				265						270				
gct	gca	acc	ggc	gcc	gcc	acc	gcc	gct	act	ggt	ggc	tac	aaa	gtc			861
Ala	Ala	Thr	Gly	Ala	Ala	Thr	Ala	Ala	Thr	Gly	Gly	Tyr	Lys	Val			
		275				280					285						

<210> 60
<211> 287
<212> PRT
<213> *Phleum pratense*

<400> 60

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

100H94~2.TXT

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 61
 <211> 861
 <212> DNA
 <213> Phleum pratense

<220>
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 <222> (1)..(861)

<220>
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 <222> (196)..(198)

<220>
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 <222> (397)..(399)

<220>
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100H94~2.TXT

<220>
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 <222> (664)..(666)

<220>
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 <222> (727)..(729)

<220>
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 <222> (760)..(762)

<400> 61 gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly 1 5 10 15	48
tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly 20 25 30	96
aag gcg acg acc gag gag cag aag ctg atc gag aag atc aac gcc ggc Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly 35 40 45	144
ttc aag gcg gcc ttg gcc gct gcc ggc gtc ccg cca gcg gac aag Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys 50 55 60	192
tac aac acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe 65 70 75 80	240
gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gaa tcc agc tcc Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser 85 90 95	288
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr 100 105 110	336
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val 115 120 125	384
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val 130 135 140	432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly 145 150 155 160	480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala 165 170 175	528
acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu 180 185 190	576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc gcc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu 195 200 205	624
agc tac aag ttc atc ccc gcc ctg gag gcc gcc gtc aag aaa gcc tac Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr	672

100H94~2.TXT

210

215

220

gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag 720
 Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct 768
 Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

gcc aag ccc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc 816
 Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

gcf gcc acc ggc gcc acc gcc gct act ggt ggc tac aaa gtc 861
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 62

<211> 287

<212> PRT

<213> Phleum pratense

<400> 62

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

100H94~2.TXT

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 63
<211> 861
<212> DNA
<213> **Phleum pratense**

<220>
<221> CDS
<222> (1)..(861)

<220>
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<222> (664)..(666)

<220>
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<222> (726)..(728)

<220>
<221> mutation
<222> (760)..(762)

<400> 63
gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc ggc
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

48

100H94~2.TXT																	
tac	acc	ccc	gcc	acc	ccc	gcc	gcc	ccg	gcc	gga	gcg	gag	cca	gca	ggt		96
Tyr	Thr	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Gly	Ala	Glu	Pro	Ala	Gly		
20								25				30					
aag	gcg	acg	acc	gag	gag	cag	aag	ctg	atc	gag	aag	aaa	aac	gcc	gcc		144
Lys	Ala	Thr	Thr	Glü	Glü	Gln	Lys	Leu	Ile	Glü	Lys	Lys	Asn	Ala	Gly		
35				40							45						
ttc	aag	gcg	gcc	ttg	gcc	gct	gcc	gcc	ggc	gtc	ccg	cca	gcg	gac	aag		192
Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys		
50				55						60							
tac	agg	acg	ttc	gtc	gca	acc	ttc	ggc	gcg	gcc	tcc	aac	aag	gcc	ttc		240
Tyr	Arg	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe		
65				70						75					80		
gcg	gag	ggc	ctc	tcg	ggc	gag	ccc	aag	ggc	gcc	gcc	gaa	tcc	agc	tcc		288
Ala	Glu	Gly	Leu	Ser	Gly	Glü	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser		
85								90					95				
aag	gcc	gcf	ctc	acc	tcc	aag	ctc	gac	gcc	gcc	tac	aag	ctc	gcc	tac		336
Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr		
100						105						110					
aag	aca	gcc	gag	ggc	gcf	acg	cct	gag	gcc	aag	tac	gac	gcc	tac	gtc		384
Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val		
115						120					125						
gcc	acc	gta	agc	gag	gcf	ctc	agc	atc	atc	gcc	ggc	acc	ctc	gag	gtc		432
Ala	Thr	Val	Ser	Glu	Ala	Leu	Ser	Ile	Ile	Ala	Gly	Thr	Leu	Glu	Val		
130						135					140						
cac	gcc	gtc	aag	ccc	gcf	gcc	gag	gag	gtc	aag	gtc	atc	ccc	gcc	ggc		480
His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glü	Val	Lys	Val	Ile	Pro	Ala	Gly		
145						150				155					160		
gag	ctg	cag	gtc	atc	gag	aag	gtc	gac	gcc	gcc	ttc	aag	gtc	gct	gcc		528
Glü	Leu	Gln	Val	Ile	Glu	Lys	Val	Asp	Ala	Ala	Phe	Lys	Val	Ala	Ala		
165							170						175				
acc	gcc	gcc	aac	gcc	gcc	ccc	gcc	aac	gac	aag	att	acc	gtc	ttc	gag		576
Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	Asp	Lys	Ile	Thr	Val	Phe	Glü		
180							185					190					
gcc	gcc	ttc	aac	gac	gcc	atc	aag	gcf	agc	acg	ggc	ggc	gcc	tac	gag		624
Ala	Ala	Phe	Asn	Asp	Ala	Ile	Lys	Ala	Ser	Thr	Gly	Gly	Ala	Tyr	Glü		
195							200					205					
agc	tac	aag	ttc	atc	ccc	gcc	ctg	gag	gcc	gcc	gtc	aag	aaa	gcc	tac		672
Ser	Tyr	Lys	Phe	Ile	Pro	Ala	Leu	Glu	Ala	Ala	Val	Lys	Lys	Ala	Tyr		
210							215					220					
gcc	gcc	acc	gtc	gcc	acc	gcf	ccg	gag	gtc	aag	tac	act	gtc	ttt	gag		720
Ala	Ala	Thr	Val	Ala	Thr	Ala	Pro	Glu	Val	Lys	Tyr	Thr	Val	Phe	Glü		
225							230				235				240		
acc	gca	gaa	aaa	aag	gcc	atc	acc	gcc	atg	tcc	gaa	gca	aaa	aag	gct		768
Thr	Ala	Glu	Lys	Lys	Ala	Ile	Thr	Ala	Met	Ser	Glu	Ala	Lys	Lys	Ala		
245								250					255				
gcc	aag	ccc	gcc	gcc	gct	gcc	acc	gcc	acc	gca	acc	gcc	gcc	gtt	ggc		816
Ala	Lys	Pro	Ala	Ala	Ala	Ala	Thr	Ala	Thr	Ala	Thr	Ala	Ala	Val	Gly		
260							265					270					
gct	gca	acc	ggc	gcc	gcc	acc	gcc	gct	act	gtt	ggc	tac	aaa	gtc			861
Ala	Ala	Thr	Gly	Ala	Ala	Thr	Ala	Ala	Thr	Gly	Gly	Tyr	Lys	Val			
275							280					285					

100H94~2.TXT

<210> 64
<211> 287
<212> PRT
<213> Phleum pratense

<400> 64

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

Ala Thr Val Ser Glu Ala Leu Ser Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

100H94~2.TXT
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 65
<211> 861
<212> DNA
<213> *Phleum pratense*

<220>
<221> CDS
<222> (1)..(861)

<220>
<221> mutation
<222> (133)..(135)

<220>
<221> mutation
<222> (409)..(411)

<220>
<221> mutation
<222> (562)..(564)

<220>
<221> mutation
<222> (664)..(666)

<220>
<221> mutation
<222> (726)..(728)

<220>
<221> mutation
<222> (760)..(762)

<400> 65
gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc 48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt 96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc 144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45

ttc aag gcg gcc ttg gcc gct gcc ggc gtc ccg cca gcg gac aag 192
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc 240
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc 288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser

100H94~2.TXT

85	90	95	
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr 100 105 110			336
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val 115 120 125			384
gcc acc gta agc gag gcg ctc cgc aaa atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Glu Ala Leu Arg Lys Ile Ala Gly Thr Leu Glu Val 130 135 140			432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly 145 150 155 160			480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala 165 170 175			528
acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu 180 185 190			576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu 195 200 205			624
agc tac aag ttc atc ccc gcc ctg gag gcc gcc gtc aag aaa gcc tac Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr 210 215 220			672
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu 225 230 235 240			720
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala 245 250 255			768
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Ala Val Gly 260 265 270			816
gct gcc acc ggc gcc acc gcc gct act ggt ggc tac aaa gtc Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val 275 280 285			861

<210> 66
<211> 287
<212> PRT
<213> Phleum pratense

<400> 66

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45

100H94~2.TXT

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

Ala Thr Val Ser Glu Ala Leu Arg Lys Ile Ala Gly Thr Leu Glu Val
130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 67
<211> 861
<212> DNA
<213> Phleum pratense

<220>

100H94~2.TXT

<221> CDS
 <222> (1)..(861)

<220>
 <221> mutation
 <222> (133)..(135)

<220>
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 <222> (397)..(399)

<220>
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 <222> (559)..(561)

<220>
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 <222> (664)..(666)

<220>
 <221> mutation
 <222> (726)..(728)

<220>
 <221> mutation
 <222> (760)..(762)

<400> 67

gcc	gat	ctc	ggt	tac	ggc	ccc	gcc	acc	cca	gct	gcc	ccg	gcc	gcc	ggc	48
Ala	Asp	Leu	Gly	Tyr	Gly	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Ala	Gly	
1				5				10					15			

tac	acc	ccc	gcc	acc	ccc	gcc	ggc	ccg	gca	ggt	96
Tyr	Thr	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Gly	
20				25						30	

aag	gct	acg	acc	gag	gag	cag	aag	ctg	atc	gag	aag	aaa	aac	gcc	ggc	144
Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	Lys	Lys	Asn	Ala	Gly	
35				40						45						

ttc	aag	gct	gcc	ttg	gcc	gct	gcc	ggc	gtc	ccg	cca	gct	gac	aag	192
Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys
50				55						60					

tac	agg	acg	ttc	gca	acc	ttc	ggc	gct	tcc	aac	aag	gcc	ttc	240	
Tyr	Arg	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe
65				70						75				80	

gct	gag	ggc	ctc	tcg	ggc	gag	ccc	aag	ggc	gcc	gcc	gaa	tcc	agc	tcc	288
Ala	Glu	Gly	Leu	Ser	Gly	Glu	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser	
85				90						95						

aag	gcc	gct	ctc	acc	tcc	aag	ctc	gac	gcc	gcc	tac	aag	ctc	gcc	tac	336
Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr	
100				105							110					

aag	aca	gcc	gag	ggc	gct	acg	cct	gag	gcc	aag	tac	gac	gcc	tac	gtc	384
Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val	
115				120							125					

gcc	acc	gta	agc	agc	gct	cgc	atc	atc	gcc	ggc	acc	ctc	gag	gtc	432
Ala	Thr	Val	Ser	Ser	Ala	Leu	Arg	Ile	Ile	Ala	Gly	Thr	Leu	Glu	Val
130				135						140					

cac	gcc	gtc	aag	ccc	gct	gcc	gag	gag	gtc	aag	gtc	atc	ccc	gcc	ggc	480
His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	Val	Ile	Pro	Ala	Gly	
145				150						155				160		

100H94~2.TXT

gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc	528
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala	
165 170 175	
acc gcc gcc aac gcc gcc ccc gcc aac cat aag ttc acc gtc ttc gag	576
Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu	
180 185 190	
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag	624
Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu	
195 200 205	
agc tac aag ttc atc ccc gcc ctg gag gcc gtc aag aaa gcc tac	672
Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr	
210 215 220	
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag	720
Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu	
225 230 235 240	
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct	768
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala	
245 250 255	
gcc aag ccc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc	816
Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly	
260 265 270	
gct gcc acc ggc gcc acc gcc gct act ggt ggc tac aaa gtc	861
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val	
275 280 285	
<210> 68	
<211> 287	
<212> PRT	
<213> Phleum pratense	
<400> 68	
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly	
1 5 10 15	
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly	
20 25 30	
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly	
35 40 45	
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys	
50 55 60	
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe	
65 70 75 80	
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser	
85 90 95	
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr	
100 105 110	

100H94~2.TXT
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 69
<211> 861
<212> DNA
<213> Phleum pratense

<220>
<221> CDS
<222> (1)..(861)

<220>
<221> mutation
<222> (133)..(135)

<220>
<221> mutation
<222> (397)..(399)

<220>
<221> mutation
<222> (664)..(666)

<220>
<221> mutation
<222> (694)..(696)

100H94~2.TXT

<220>
 <221> mutation
 <222> (726)..(728)

<220>
 <221> mutation
 <222> (760)..(762)

<400> 69

gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc	48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly	
1 5 10 15	
tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt	96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly	
20 25 30	
aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc	144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly	
35 40 45	
ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag	192
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys	
50 55 60	
tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc	240
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe	
65 70 75 80	
gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc	288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser	
85 90 95	
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac	336
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr	
100 105 110	
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc	384
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val	
115 120 125	
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc	432
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val	
130 135 140	
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc	480
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly	
145 150 155 160	
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc	528
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala	
165 170 175	
acc gcc gcc aac gcc gcc ccc gcc aac gac aag ttc acc gtc ttc gag	576
Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu	
180 185 190	
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag	624
Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu	
195 200 205	
agc tac aag ttc atc ccc gcc ctg gag gcc gcc gtc aag aaa gcc tac	672
Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr	
210 215 220	
gcc gcc acc gtc gcc acc gcg ggc gag gtc aag tac act gtc ttt gag	720
Ala Ala Thr Val Ala Thr Ala Gly Glu Val Lys Tyr Thr Val Phe Glu	

100H94~2.TXT

225	230	235	240	
acc gca gaa aaa aag	gcc atc acc	gcc atg tcc	gaa gca aaa aag	gct
Thr Ala Glu Lys Lys	Ala Ile Thr Ala	Met Ser Glu Ala	Lys Ala	
245	250	255		768
gcc aag ccc gcc gct	gcc acc gcc acc	gcc acc gcc gtt	gcc gtc	816
Ala Lys Pro Ala Ala	Ala Ala Thr Ala	Thr Ala Ala Val	Gly	
260	265	270		
gct gcc acc ggc gcc	acc gcc gct act ggt	ggc tac aaa gtc		861
Ala Ala Thr Gly Ala Ala	Thr Ala Ala Thr Gly	Gly Tyr Lys Val		
275	280	285		
<210> 70				
<211> 287				
<212> PRT				
<213> Phleum pratense				
<400> 70				
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly				
1	5	10	15	
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly				
20	25	30		
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly				
35	40	45		
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys				
50	55	60		
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe				
65	70	75	80	
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser				
85	90	95		
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr				
100	105	110		
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val				
115	120	125		
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val				
130	135	140		
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly				
145	150	155	160	
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala				
165	170	175		
Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu				
180	185	190		

100H94~2.TXT

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Gly Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 71
 <211> 861
 <212> DNA
 <213> Phleum pratense

<220>
 <221> CDS
 <222> (1)..(861)

<220>
 <221> mutation
 <222> (133)..(135)

<220>
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 <222> (397)..(399)

<220>
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 <222> (562)..(564)

<220>
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 <222> (640)..(642)

<220>
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 <222> (726)..(728)

<220>
 <221> mutation
 <222> (760)..(762)

<400> 71
 gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc
 Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

48

96

100H94~2.TXT

aag gcg acg acc gag gag cag aag	ctg atc gag aag aaa aac	gcc ggc	144
Lys Ala Thr Thr Glu Glu Gln Lys	Leu Ile Glu Lys Lys	Asn Ala Gly	
35 40	45		
ttc aag gcg gcc ttg gcc gct	gcc ggc gtc ccg cca	gcg gac aag	192
Phe Lys Ala Ala Leu Ala Ala	Ala Ala Gly Val	Pro Pro Ala Asp Lys	
50 55	60		
tac agg acg ttc gtc gca acc	ttc ggc gcg gcc tcc aac	aag gcc ttc	240
Tyr Arg Thr Phe Val Ala Thr	Phe Gly Ala Ala Ser	Asn Lys Ala Phe	
65 70	75	80	
gcg gag ggc ctc tcg ggc gag	ccc aag ggc gcc gcc gaa	tcc agc tcc	288
Ala Glu Gly Leu Ser Gly Glu Pro	Lys Gly Ala Ala Glu Ser	Ser Ser Ser	
85	90	95	
aag gcc gcg ctc acc tcc aag	ctc gac gcc gcc tac aag	ctc gcc tac	336
Lys Ala Ala Leu Thr Ser Lys	Leu Asp Ala Ala Tyr	Lys Leu Ala Tyr	
100	105	110	
aag aca gcc gag ggc gcg acg	cct gag gcc aag tac gac	gcc tac gtc	384
Lys Thr Ala Glu Gly Ala Thr	Pro Glu Ala Lys Tyr Asp	Ala Tyr Val	
115	120	125	
gcc acc gta agc agc gcg ctc	cgc atc atc gcc ggc acc	ctc gag gtc	432
Ala Thr Val Ser Ser Ala Leu	Arg Ile Ile Ala Gly	Thr Leu Glu Val	
130	135	140	
cac gcc gtc aag ccc gcg gcc	gag gtc aag gtc atc ccc	gcc ggc	480
His Ala Val Lys Pro Ala Ala	Glu Val Lys Val Ile	Pro Ala Gly	
145	150	155	160
gag ctg cag gtc atc gag aag	gtc gac gcc gcc ttc aag	gtc gct gcc	528
Glu Leu Gln Val Ile Glu Lys Val	Asp Ala Ala Phe Lys Val	Ala Ala	
165	170	175	
acc gcc gcc aac gcc gcc ccc	gcc aac gac aag att acc	gtc ttc gag	576
Thr Ala Ala Asn Ala Ala Pro	Ala Asn Asp Lys Ile	Thr Val Phe Glu	
180	185	190	
gcc gcc ttc aac gac gcc atc	aag gcg agc acg ggc ggc	gcc tac gag	624
Ala Ala Phe Asn Asp Ala Ile	Lys Ala Ser Thr Gly	Gly Ala Tyr Glu	
195	200	205	
agc tac aag ttc atc ggc gcc	ctg gag gcc gcc gtc aag	cag gcc tac	672
Ser Tyr Lys Phe Ile Gly Ala	Leu Glu Ala Ala Val	Lys Gln Ala Tyr	
210	215	220	
gcc gcc acc gtc gcc acc gcg	ccg gag gtc aag tac act	gtc ttt gag	720
Ala Ala Thr Val Ala Thr Ala	Pro Glu Val Lys Tyr	Thr Val Phe Glu	
225	230	235	240
acc gca gaa aaa aag gcc atc	acc gcc atg tcc gaa gca	aaa aag gct	768
Thr Ala Glu Lys Lys Ala Ile	Thr Ala Met Ser Glu	Ala Lys Lys Ala	
245	250	255	
gcc aag ccc gcc gcc gct	gcc acc gca acc gcc	gcc gtt ggc	816
Ala Lys Pro Ala Ala Ala Thr	Ala Thr Ala Thr Ala	Ala Val Gly	
260	265	270	
gcg gcc acc ggc gcc acc gcc	gct act ggt ggc tac aaa	gtc	861
Ala Ala Thr Gly Ala Ala Thr	Ala Ala Thr Gly	Tyr Lys Val	
275	280	285	

<210> 72
 <211> 287
 <212> PRT

<213> Phleum pratense

<400> 72

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
130 135 140His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
180 185 190Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
210 215 220Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

100H94~2.TXT
Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 73
<211> 861
<212> DNA
<213> Phleum pratense

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<222> (1)..(861)

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<400> 73
gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc 48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt 96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc 144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45

ttc aag gcg gcc ttg gcc gct gcc ggc gtc ccg cca gcg gac aag 192
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc 240
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gaa tcc agc tcc 288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser
85 90 95

aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac 336
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr

100H94~2.TXT

100	105	110	
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val	115 120 125	105 120 125	384
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val	130 135 140	130 135 140	432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly	145 150 155	145 150 155	480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala	165 170 175	165 170 175	528
acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu	180 185 190	180 185 190	576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc gac tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu	195 200 205	195 200 205	624
agc tac aac ttc atc ccc gcc ctg gag gcc gtc aag cag gcc tac Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr	210 215 220	210 215 220	672
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu	225 230 235 240	225 230 235 240	720
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala	245 250 255	245 250 255	768
gcc aag ccc gcc gcc gct gcc acc gca acc gcc gcc gtt ggc Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Ala Val Val Gly	260 265 270	260 265 270	816
gct gcc acc ggc gcc acc gcc gct act ggt ggc tac aaa gtc Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val	275 280 285	275 280 285	861

<210> 74
 <211> 287
 <212> PRT
 <213> Phleum pratense
 <400> 74

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

100H94~2.TXT

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 75
<211> 861
<212> DNA
<213> Phleum pratense

<220>
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<220>

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<400> 75
gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc 48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt 96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

aag gcg acg acc gag gag cag aag ctg atc gag aag atc aac gcc ggc 144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
35 40 45

ttc aag gcg gcc ttg gcc gct gcc ggc gtc ccg cca gcg gac aag 192
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

tac aac acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc 240
Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc 288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac 336
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc 384
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

gcc acc gta agc gag gcg ctc agc atc atc gcc ggc acc ctc gag gtc 432
Ala Thr Val Ser Glu Ala Leu Ser Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc 480
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc 528
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

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100H94~2.TXT

acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag	576
Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu	
180 185 190	
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag	624
Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu	
195 200 205	
agc tac aag ttc atc ccc gcc ctg gag gcc gtc aag aaa gcc tac	672
Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr	
210 215 220	
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag	720
Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu	
225 230 235 240	
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct	768
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala	
245 250 255	
gcc aag ccc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc	816
Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly	
260 265 270	
gct gcc acc ggc gcc acc gct act ggt ggc tac aaa gtc	861
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val	
275 280 285	

<210> 76

<211> 287

<212> PRT

<213> Phleum pratense

<400> 76

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

Ala Thr Val Ser Glu Ala Leu Ser Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 77
 <211> 861
 <212> DNA
 <213> Phleum pratense

<220>
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 <222> (1)..(861)

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<220>
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<220>
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 <222> (760)..(762)

<400>	77																
gcc	gat	ctc	ggt	tac	ggc	ccc	gcc	acc	cca	gct	gcc	ccg	gcc	gcc	gcc	gac	48
Ala	Asp	Leu	Gly	Tyr	Gly	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Ala	Ala	Gly	
1		5				10						15					
tac	acc	ccc	gcc	acc	ccc	gcc	gcc	ccg	gcc	gga	gct	gag	cca	gca	gca	ggt	96
Tyr	Thr	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Gly	Ala	Glu	Pro	Ala	Ala	Gly	
		20				25						30					
aag	gct	acg	acc	gag	gag	cag	aag	ctg	atc	gag	aag	atc	aac	gcc	gac	gac	144
Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	Lys	Ile	Asn	Ala	Gly		
		35			40						45						
ttc	aag	gct	gcc	ttg	gcc	gct	gcc	gcc	gctc	ccg	cca	gct	gac	aag			192
Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys		
		50			55					60							
tac	aac	acg	ttc	gtc	gca	acc	ttc	gct	gct	tcc	aac	aag	gcc	ttc			240
Tyr	Ash	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe		
		65			70					75				80			
gct	gag	gct	ctc	tcg	gct	gag	ccc	aag	gct	gcc	gct	gaa	tcc	agc	tcc		288
Ala	Glu	Gly	Leu	Ser	Gly	Glu	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser		
		85			90							95					
aag	gcc	gct	ctc	acc	tcc	aag	ctc	gac	gcc	gcc	tac	aag	ctc	gcc	tac		336
Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr		
		100			105							110					
aag	aca	gcc	gag	ggc	gct	acg	cct	gag	gcc	aag	tac	gac	gcc	tac	gtc		384
Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val		
		115			120							125					
gcc	acc	gta	agc	gag	gct	ctc	cgc	aaa	atc	gcc	ggc	acc	ctc	gag	gtc		432
Ala	Thr	Val	Ser	Glu	Ala	Leu	Arg	Lys	Ile	Ala	Gly	Thr	Leu	Glu	Val		
		130			135						140						
cac	gcc	gtc	aag	ccc	gct	gcc	gag	gag	gtc	aag	gtc	atc	ccc	gcc	ggc		480
His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	Val	Ile	Pro	Ala	Gly		
		145			150					155				160			
gag	ctg	cag	gtc	atc	gag	aag	gtc	gac	gcc	gcc	ttc	aag	gtc	gct	gcc		528
Glu	Leu	Gln	Val	Ile	Glu	Lys	Val	Asp	Ala	Ala	Phe	Lys	Val	Ala	Ala		
		165			170							175					
acc	gcc	gcc	aac	gcc	gcc	ccc	gcc	aac	gac	aag	att	acc	gtc	ttc	gag		576
Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	Asp	Lys	Ile	Thr	Val	Phe	Glu		
		180			185							190					
gcc	gcc	tcc	aac	gac	gcc	atc	aag	gct	agc	acg	ggc	ggc	gcc	tac	gag		624
Ala	Ala	Phe	Asn	Asp	Ala	Ile	Lys	Ala	Ser	Thr	Gly	Gly	Ala	Tyr	Glu		
		195			200						205						
agc	tac	aag	ttc	atc	ccc	gcc	ctg	gag	gcc	gcc	gtc	aag	aaa	gcc	tac		672
Ser	Tyr	Lys	Phe	Ile	Pro	Ala	Leu	Glu	Ala	Ala	Val	Lys	Lys	Ala	Tyr		
		210			215						220						
gcc	gcc	acc	gtc	gcc	acc	gct	ccg	gag	gtc	aag	tac	act	gtc	ttt	gag		720
Ala	Ala	Thr	Val	Ala	Thr	Ala	Pro	Glu	Val	Lys	Tyr	Thr	Val	Phe	Glu		
		225			230					235				240			
acc	gca	gaa	aaa	aag	gcc	atc	acc	gcc	atg	tcc	gaa	gca	aaa	aag	gct		768
Thr	Ala	Glu	Lys	Lys	Ala	Ile	Thr	Ala	Met	Ser	Glu	Ala	Lys	Lys	Ala		

100H94~2.TXT

245

250

255

gcc aag ccc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc
 Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

816

gct gcc acc ggc gcc acc gcc gct act ggt ggc tac aaa gtc
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

861

<210> 78
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 78

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Glu Ala Leu Arg Lys Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

100H94~2.TXT

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 79
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<400> 79
 gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc
 Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

48

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

96

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc
 Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45

144

100H94~2.TXT

ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys 50 55 60	192
tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe 65 70 75 80	240
gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gaa tcc agc tcc Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser 85 90 95	288
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr 100 105 110	336
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val 115 120 125	384
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val 130 135 140	432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly 145 150 155 160	480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala 165 170 175	528
acc gcc gcc aac gcc gcc ccc gcc aac cat aag ttc acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu 180 185 190	576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu 195 200 205	624
agc tac aag ttc atc ggc gcc ctg gag gcc gcc gtc aag cag gcc tac Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr 210 215 220	672
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu 225 230 235 240	720
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala 245 250 255	768
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly 260 265 270	816
gcg gcc acc ggc gcc acc gcc gct act ggt ggc tac aaa gtc Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val 275 280 285	861
<210> 80	
<211> 287	
<212> PRT	
<213> Phleum pratense	
<400> 80	

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

100H94~2.TXT
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 81
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<220>
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 <222> (631)..(633)

<220>
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 <222> (727)..(729)

<220>
 <221> mutation
 <222> (760)..(762)

<400> 81
 gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc
 Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

48

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

96

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc
 Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45

144

ttc aag gcg gcc ttg gcc gct gcc ggc gtc ccg cca gcg gac aag
 Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

192

tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc
 Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

240

gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gaa tcc agc tcc
 Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

288

aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac
 Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

336

aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc
 Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val

384

100H94~2.TXT

115	120	125	
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val			432
130	135	140	
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly			480
145	150	155	160
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala			528
165	170	175	
acc gcc gcc aac gcc gcc ccc gcc aac cat aag ttc acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu			576
180	185	190	
gcc gcc ttc aac gac gcc atc aag gcg agc acg gac ggc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu			624
195	200	205	
agc tac aac ttc atc ccc gcc ctg gag gcc gcc gtc aag cag gcc tac Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr			672
210	215	220	
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu			720
225	230	235	240
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala			768
245	250	255	
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly			816
260	265	270	
gct gcc acc ggc gcc acc gcc gct act ggt ggc tac aaa gtc Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val			861
275	280	285	
<210> 82 <211> 287 <212> PRT <213> Phleum pratense			
<400> 82			
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly 1 5 10 15			
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly 20 25 30			
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly 35 40 45			
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys 50 55 60			
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe 65 70 75 80			

100H94~2.TXT

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 83
<211> 861
<212> DNA
<213> Phleum pratense

<220>
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<222> (1)..(861)

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<222> (133)..(135)

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<222> (640)..(642)

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<222> (694)..(696)

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<222> (727)..(729)

<220>
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<222> (760)..(762)

<400> 83
gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45

ttc aag gcg gcc ttg gcc gct gcc ggc gtc ccg cca gcg gac aag
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

gcf gag ggc ctc tcg ggc gag ccc aag ggc gcc gaa tcc agc tcc
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

acc gcc gcc aac gcc gcc ccc gcc aac gac aag ttc acc gtc ttc gag
Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu
180 185 190

48

96

144

192

240

288

336

384

432

480

528

576

100H94~2.TXT

gcc gcc ttc aac gac gcc atc aag gcg	195	200	205	624
Ala Ala Phe Asn Asp Ala Ile Lys Ala				
195	200	205		
agc tac aag ttc atc ggc gcc ctg gag	210	215	220	672
Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala				
210	215	220		
gcc gcc acc gtc gcc acc gcg ggc gag	225	230	235	720
Ala Ala Thr Val Ala Thr Ala Gly Glu Val				
225	230	235	240	
acc gca gaa aaa aag gcc atc acc gcc atg	245	250		768
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met				
245	250		255	
gcc aag ccc gcc gct gcc acc gcc acc gca	260	265	270	816
Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala				
260	265	270		
gct gcc acc ggc gcc acc gcc gct act ggt	275	280	285	861
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr				
275	280	285		
<210> 84				
<211> 287				
<212> PRT				
<213> Phleum pratense				
<400> 84				
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro	1	5	10	15
Ala Ala Pro Ala Ala Pro Ala Gly Ala				
Tyr Thr Pro Ala Thr Pro Ala Ala Pro	20	25	30	
Ala Gly Ala Glu Pro Ala Ala Gly Ala				
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile	35	40	45	
Glu Lys Asn Ala Gly				
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val	50	55	60	
Pro Pro Ala Asp Lys				
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala	65	70	75	80
Ala Ala Ser Asn Lys Ala Phe				
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly	85	90	95	
Ala Ala Glu Ser Ser				
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala	100	105	110	
Ala Ala Tyr Lys Leu Ala Tyr				
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala	115	120	125	
Lys Tyr Asp Ala Tyr Val				
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile	130	135	140	
Ala Gly Thr Leu Glu Val				

100H94~2.TXT
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Gly Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 85
<211> 861
<212> DNA
<213> Phleum pratense

<220>
<221> CDS
<222> (1)..(861)

<220>
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<220>
<221> mutation
<222> (727)..(729)

<220>
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<222> (760)..(762)

100H94~2.TXT

260

265

270

gct	gcc	acc	ggc	gcc	gcc	acc	gcc	gct	act	ggt	ggc	tac	aaa	gtc	861
Ala	Ala	Thr	Gly	Ala	Ala	Thr	Ala	Ala	Thr	Gly	Gly	Tyr	Lys	Val	
275							280					285			

<210> 86

<211> 287

<212> PRT

<213> Phleum pratense

<400> 86

Ala	Asp	Leu	Gly	Tyr	Gly	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Ala	Gly
1			5					10					15		

Tyr	Thr	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Gly	Ala	Glu	Pro	Ala	Gly
20				25							30				

Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	Lys	Lys	Asn	Ala	Gly
35				40							45				

Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys
50				55					60					

Tyr	Arg	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe
65				70				75					80		

Ala	Glu	Gly	Leu	Ser	Gly	Glu	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser
				85				90				95			

Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr
100					105						110				

Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val
115					120					125					

Ala	Thr	Val	Ser	Ser	Ala	Leu	Arg	Ile	Ile	Ala	Gly	Thr	Leu	Glu	Val
130					135					140					

His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	Val	Ile	Pro	Ala	Gly
145				150					155			160			

Glu	Leu	Gln	Val	Ile	Glu	Lys	Val	Asp	Ala	Ala	Phe	Lys	Val	Ala	Ala
				165			170				175				

Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	Asp	Lys	Phe	Thr	Val	Phe	Glu
180					185					190					

Ala	Ala	Phe	Asn	Asp	Ala	Ile	Lys	Ala	Ser	Thr	Gly	Gly	Ala	Tyr	Glu
195					200					205					

Ser	Tyr	Asn	Phe	Ile	Pro	Ala	Leu	Glu	Ala	Ala	Val	Lys	Gln	Ala	Tyr
210				215					220						

Ala Ala Thr Val Ala Thr Ala Gly Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 87

<211> 666

<212> DNA

<213> Dermatophagoides pteronyssinus

<220>

<221> CDS

<222> (1)..(666)

<400> 87

act aac gcc tgc agt atc aat gga aat gct cca gct gaa atc gat ttg 48
 Thr Asn Ala Cys Ser Ile Asn Gly Asn Ala Pro Ala Glu Ile Asp Leu
 1 5 10 15

cga caa atg cga act gtc act ccc att cgt atg caa gga ggc tgt ggt 96
 Arg Gln Met Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
 20 25 30

tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg 144
 Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45

gct tac cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
 Ala Tyr Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca cgt ggt att 240
 Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
 65 70 75 80

gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac 288
 Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95

gtt gca cga gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt 336
 Val Ala Arg Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
 100 105 110

atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt 384
 Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
 115 120 125

gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc 432
 Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

aaa gat tta gac gca ttc cgt cat tat gat ggc cga aca atc att caa 480
 Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Arg Thr Ile Ile Gln
 145 150 155 160

100H94~2.TXT

cgc gat aat ggt tac caa cca aac tat cac gct gtc aac att gtt ggt	528
Arg Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val Gly	
165 170 175	
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg	576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp	
180 185 190	
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc	624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile	
195 200 205	
gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc	666
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu	
210 215 220	
<210> 88	
<211> 222	
<212> PRT	
<213> Dermatophagoides pteronyssinus	
<400> 88	
Thr Asn Ala Cys Ser Ile Asn Gly Asn Ala Pro Ala Glu Ile Asp Leu	
1 5 10 15	
Arg Gln Met Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly	
20 25 30	
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu	
35 40 45	
Ala Tyr Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp	
50 55 60	
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile	
65 70 75 80	
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr	
85 90 95	
Val Ala Arg Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly	
100 105 110	
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg	
115 120 125	
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	
130 135 140	
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Arg Thr Ile Ile Gln	
145 150 155 160	
Arg Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val Gly	
165 170 175	

100H94~2.TXT

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
 180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
 195 200 205

Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
 210 215 220

<210> 89

<211> 387

<212> DNA

<213> Dermatophagoides pteronyssinus

<220>

<221> CDS

<222> (1)..(387)

<400> 89

gat caa gtc gat gtc aaa gat tgt gcc aat cat gaa atc aaa aaa gtt	48
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val	
1 5 10 15	

ttg gta cca gga tgc cat ggt tca gaa cca tgt atc att cat cgt ggt	96
Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly	
20 25 30	

aaa cca ttc caa ttg gaa gcc gtt ttc gaa gcc aac caa aac aca aaa	144
Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys	
35 40 45	

acc gct aaa att gaa atc aaa gcc tca atc gat ggt tta gaa gtt gat	192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp	
50 55 60	

gtt ccc ggt atc gat cca aat gca tgc cat tac atg aaa tgc cca ttg	240
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu	
65 70 75 80	

gtt aaa gga caa caa tat gat att aaa tat aca tgg aat gtt ccg aaa	288
Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys	
85 90 95	

att gca cca aaa tct gaa aat gtt gtc gtc act gtt aaa gtt atg ggt	336
Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly	
100 105 110	

gat gat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cgc	384
Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg	
115 120 125	

gat	387
Asp	

<210> 90

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 90

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val	
1 5 10 15	

100H94~2.TXT

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
100 105 110

Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 91
<211> 480
<212> DNA
<213> *Betula verrucosa*

<400> 91
ggtgtgttta attatgagac tgagaccacc tctgttatcc cagcagctcg actgttcaag 60
gcctttatcc ttgatggcga taacctctt ccaaagggtt caccggaa cattagcagt 120
gttgaaaaca ttgaaggaaa tggagggcct ggaaccatta agaagatcag ctttccccaa 180
ggcctccctt tcaagtacgt gaaggacaga gttgatgagg tggaccacac aaacttcaaa 240
tacaattaca gcgtgatcga gggcggtccc ataggcgaca cattggagaa gatctccaa 300
gagataaaga tagtggcaac ccctgatgga ggatccatct tgaagatcag caacaagtac 360
cacaccaaag gtgaccatga ggtgaaggca gagcaggtta aggcaagtaa agaaatggc 420
gagacacttt tgagggccgt tgagagctac ctcttggcac actccgatgc ctacaactaa 480

<210> 92
<211> 159
<212> PRT
<213> *Betula verrucosa*

<400> 92

Gly Val Phe Asn Tyr Glu Thr Glu Thr Thr Ser Val Ile Pro Ala Ala
1 5 10 15

100H94~2.TXT

Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro Lys
20 25 30

Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Glu Gly Asn Gly
35 40 45

Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
50 55 60

Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
65 . . . 70 . . . 75 . . . 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
85 90 95

Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly Ser
100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
115 120 125

Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu Leu
130 135 140

Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn
145 150 155

<210> 93
<211> 387
<212> DNA
<213> *Dermatophagoides pteronyssinus*

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<400> 93
gatcaagtgc atgtcaaaga ttgtgccaat catgaaatca aaaaagttt ggtaccagga 60
tgccatggtt cagaaccatg tatcattcat cgtggtaaac cattccaatt ggaagctta 120
ttcgaagcca atcaaaactc aaaaacagct aaaattgaaa tcaaagcttc aatcgatgg 180
ttagaagttg atgttcccgg tatcgatcca aatgcattgcc attatatgaa atgtccattg 240
gttcaaaggac aacaatatga tattaaatat acatggaatg ttccaaaaat tgcaccaaaa 300
tctgaaaatg ttgtcgtcac tgtaaagtt ttgggtgata atggtgtttt ggcctgtgct 360
attgctactc atgctaaaat ccgcgat 387
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<210> 94
<211> 129
<212> PRT
<213> *Dermatophagooides pteronyssinus*

<400> 94

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1 5 10 15 20

100H94~2.TXT

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
 20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Lys
 35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
 65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
 115 120 125

Asp

<210> 95
 <211> 861
 <212> DNA
 <213> Phleum pratense

<400> 95
 gccgatctcg gttacggccc cgccacccca gctgccccgg ccggccggcta caccggcc 60
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 ctgatcgaga agatcaacgc cggcttcaag gcggccttgg ccgctgccgc cggcgtcccg 180
 ccagcggaca agtacaggac gttcgtcgca accttcggcg cggcctccaa caaggccttc 240
 gcggagggcc tctcgccgca gcccaagggc gccgccaat ccagctccaa ggccgcgctc 300
 acctccaagc tcgacgcccgc ctacaagctc gcctacaaga cagccgaggg cgcgacgcct 360
 gagggcaagt acgacgccta cgtcgcccacc gtaagcgagg cgctccgcat catgcccggc 420
 accctcgagg tccacgcccgt caagccgcg gccgaggagg tcaaggtcat ccccgccggc 480
 gagctgcagg tcatcgagaa ggtcgacgcc gccttcaagg tcgctgccac cgccgccaac 540
 gccgcccccg ccaacgacaa gttcaccgtc ttcgaggccg ccttcaacga cgccatcaag 600
 gcgagcacgg gcggcccta cgagagctac aagttcatcc cggccctgga ggccgcccgtc 660
 aagcaggcct acgccgcccac cgtcgcccacc gcggccggagg tcaagtacac tgtctttgag 720
 accgcactga aaaaggccat caccgccatg tccgaagcac agaaggctgc caagccgccc 780
 gccgctgcca ccgcccaccgc aaccggccgc gttggcgccg ccaccggcgc cgccaccgccc 840
 gctactggtg gctacaaagt c 861

<210> 96
 <211> 287
 <212> PRT
 <213> Phleum pratense
 <400> 96

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Glu Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

100H94~2.TXT
Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Gln Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 97
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<220>
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<400> 97
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41

<210> 98
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 98
cgagctgctg ggataacaga ggtggtctca gtctcataat t

41

<210> 99
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<220>
<223> oligonucleotide primer

<400> 99
tgagacccccc tctgttatcc cag

23

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<212> DNA
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<220>
<223> oligonucleotide primer

<400> 100
acagaggggg tctcagtctc ata

23

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<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 101
gttgccaaacg atcag

15

<210> 102
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 102
gataccctct ttccacaggt tgcacccaa g

31

<210> 103
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<220>
<223> oligonucleotide primer

<400> 103
acctgtggaa agagggatc gccatcaagg a

31

<210> 104
<211> 23
<212> DNA
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<220>
<223> oligonucleotide primer

<400> 104
aacatttcag gaaatggagg gcc

23

<210> 105
<211> 23
<212> DNA
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<220>
<223> oligonucleotide primer

<400> 105
tttcctgaaa tggtttcaac act

23

<210> 106
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<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 106
ttaagaacat cagtttcccc gaa

23

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<212> DNA
<213> Artificial Sequence

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agctgatgtt cttaatggtt cca		
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<211> 23		
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<213> Artificial Sequence		
<220>		
<223> oligonucleotide primer		
<400> 108		23
ggaccatgca aacttcaa at aca		
<210> 109		
<211> 23		
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agtttgcattt gtccacacctca tca		
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<220>		
<223> oligonucleotide primer		
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tttccctc tag gcctcccttt caa		
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<223> oligonucleotide primer		
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aggcctgagg gaaagctgat ctt		
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<211> 24		
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<220>		
<223> oligonucleotide primer		
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100H94~2.TXT

<210> 113
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<220>
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<400> 113
ccctccagat ccttcaatgt tttc 24

<210> 114
<211> 24
<212> DNA
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<220>
<223> oligonucleotide primer

<400> 114
ggcaactggat gatggaggat ccat 24

<210> 115
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<220>
<223> oligonucleotide primer

<400> 115
ccatcaccag ttgccactat cttt 24

<210> 116
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<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 116
catgccatcc gtaag 15

<210> 117
<211> 202
<212> PRT
<213> Vespula

<220>
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<223> where Xaa is any amino acid

<400> 117
Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
1 5 10 15
Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Val
20 25 30

100H94~2.TXT

Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His
35 40 45

Asn Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro
50 55 60

Gly Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn Asp
65 70 75 80

Glu Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly
85 90 95

His Asp Thr Cys Arg Asp Val Ala Lys Tyr Gln Val Gly Gln Asn Val
100 105 110

Ala Leu Thr Gly Ser Thr Ala Ala Lys Tyr Asp Asp Pro Xaa Xaa Leu
115 120 125

Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys
130 135 140

Phe Ser Gly Asn Asp Phe Leu Lys Thr Gly His Tyr Thr Gln Met Val
145 150 155 160

Trp Ala Asn Thr Lys Glu Val Gly Cys Gly Ser Ile Lys Tyr Ile Gln
165 170 175

Glu Lys Trp His Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser Gly
180 185 190

Asn Phe Asn Glu Glu Leu Xaa Xaa Thr Lys
195 200

<210> 118
<211> 203
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(203)
<223> where Xaa is any amino acid

<400> 118

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
1 5 10 15

Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Val
20 25 30

Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His
35 40 45

100H94~2.TXT

Asn Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro
50 55 60

Gly Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn Asp
65 70 75 80

Glu Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly
85 90 95

His Asp Thr Cys Arg Asp Val Ala Lys Tyr Gln Val Gly Gln Asn Val
100 105 110

Ala Leu Thr Gly Ser Thr Ala Ala Lys Tyr Asp Asp Pro Xaa Xaa Leu
115 120 125

Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys
130 135 140

Phe Ser Gly Asn Asp Phe Leu Lys Thr Gly His Tyr Thr Gln Met Val
145 150 155 160

Trp Ala Asn Thr Lys Glu Val Gly Cys Gly Ser Ile Lys Tyr Ile Gln
165 170 175

Glu Lys Trp His Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser Gly
180 185 190

Asn Phe Lys Asn Glu Glu Leu Xaa Xaa Thr Lys
195 200

<210> 119
<211> 201
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(201)
<223> where Xaa is any amino acid

<400> 119

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
1 5 10 15

Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Val
20 25 30

Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His
35 40 45

Asn Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro
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50

55

60

Gly Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn Asp
 65 70 75 80

Glu Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly
 85 90 95

His Asp Thr Cys Arg Asp Xaa Ala Lys Tyr Gln Val Gly Gln Asn Val
 100 105 110

Ala Leu Thr Gly Ser Thr Ala Ala Lys Tyr Asp Asp Pro Xaa Xaa Leu
 115 120 125

Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys
 130 135 140

Phe Ser Gly Asn Phe Leu Lys Thr Gly His Tyr Thr Gln Met Val Trp
 145 150 155 160

Ala Asn Thr Lys Glu Val Gly Cys Gly Ser Ile Lys Phe Ile Gln Glu
 165 170 175

Lys Trp His Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser Gly Asn
 180 185 190

Phe Asn Glu Glu Leu Xaa Xaa Thr Lys
 195 200

<210> 120
 <211> 194
 <212> PRT
 <213> Vespula

<220>
 <221> MISC_FEATURE
 <222> (1)..(194)
 <223> where Xaa is any amino acid

<400> 120

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
 1 5 10 15

Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Ser
 20 25 30

Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His Asn
 35 40 45

Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro Gly
 50 55 60

100H94~2.TXT
Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asp Glu Leu
65 70 75 80

Ala Tyr Xaa Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly His Asp
85 90 95

Thr Cys Arg Asp Val Ala Lys Tyr Gln Val Gly Gln Asn Val Ala Leu
100 105 110

Thr Gly Ser Thr Ala Ala Tyr Asp Pro Xaa Xaa Leu Val Lys Met Trp
115 120 125

Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys Phe Ser Asn Phe
130 135 140

Leu Lys Gly His Tyr Thr Gln Met Val Trp Ala Asn Thr Lys Glu Val
145 150 155 160

Gly Cys Gly Ser Ile Lys Tyr Ile Gln Glu Trp His Lys His Tyr Leu
165 170 175

Val Cys Asn Tyr Gly Pro Ser Gly Asn Phe Asn Glu Glu Leu Xaa Xaa
180 185 190

Thr Lys

<210> 121
<211> 198
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(198)
<223> where Xaa can be any amino acid

<400> 121

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
1 5 10 15

Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Xaa Val Val
20 25 30

Ser Tyr Gly Leu Thr Lys Glu Lys Gln Asp Ile Leu Lys Glu His Asn
35 40 45

Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro Gly
50 55 60

Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn Asp Glu
65 70 75 80

100H94~2.TXT

Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly His
85 90 95

Asp Thr Cys Arg Asp Val Ala Lys Tyr Val Gly Gln Asn Val Ala Leu
100 105 110

Thr Gly Ser Thr Ala Lys Tyr Asp Pro Xaa Xaa Leu Val Lys Met Trp
115 120 125

Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Phe Ser Gly Asn
130 135 140

Asp Phe Leu Lys Thr Gly His Tyr Thr Gln Met Val Trp Ala Asn Thr
145 150 155 160

Lys Glu Val Gly Cys Gly Ser Ile Lys Tyr Ile Gln Glu Lys Trp His
165 170 175

Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser Gly Asn Phe Asn Glu
180 185 190

Glu Leu Xaa Xaa Thr Lys
195

<210> 122
<211> 192
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(192)
<223> where Xaa is any amino acid

<400> 122

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
1 5 10 15

Cys Lys Tyr Ser Leu Lys Pro Asn Cys Asn Lys Val Val Tyr Gly Leu
20 25 30

Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His Asn Asp Phe Arg
35 40 45

Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro Gly Pro Gln Pro
50 55 60

Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asp Glu Leu Ala Tyr Thr
65 70 75 80

Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly His Asp Thr Cys Arg
85 90 95

100H94~2.TXT

Asp Val Ala Lys Tyr Val Gly Gln Asn Val Ala Leu Thr Gly Ser Thr
100 105 110

Ala Ala Lys Tyr Asp Pro Xaa Xaa Leu Val Lys Met Trp Glu Asp Glu
115 120 125

Val Lys Asp Tyr Asn Pro Lys Lys Lys Phe Ser Asn Phe Leu Lys Gly
130 135 140

His Tyr Thr Gln Met Val Trp Ala Asn Thr Lys Glu Val Gly Cys Gly
145 150 155 160

Ser Ile Lys Tyr Ile Gln Xaa Lys Trp His Lys His Tyr Leu Val Cys
165 170 175

Asn Tyr Gly Pro Ser Gly Asn Phe Asn Glu Glu Leu Xaa Xaa Thr Lys
180 185 190

<210> 123

<211> 170

<212> PRT

<213> Vespu

<220>

<221> MISC_FEATURE

<222> (1)..(170)

<223> where Xaa is any amino acid

<400> 123

Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala Cys
1 5 10 15

Lys Tyr Gly Thr Ser Lys Pro Asn Cys Gly Val Val Tyr Gly Leu Thr
20 25 30

Glu Lys Gln Thr Ile Leu Lys His Asn Asp Phe Arg Xaa Xaa Ala Xaa
35 40 45

Gly Leu Glu Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys Asn
50 55 60

Met Asn Leu Val Trp Asn Asp Glu Leu Ala Xaa Ala Gln Val Trp Ala
65 70 75 80

Gln Cys Asn Gln Tyr Gly His Asp Thr Cys Lys Asp Lys Tyr Val Gly
85 90 95

Gln Asn Ile Ala Ile Thr Ala Ala Xaa Asp Pro Xaa Xaa Leu Val Lys
100 105 110

Met Trp Glu Glu Val Lys Asp Phe Asn Pro Trp Ser Asn Lys Thr Gly
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115

120

100H94~2.TXT

125

His Tyr Thr Gln Met Val Trp Ala Thr Lys Glu Thr Gly Cys Gly Ser
130 135 140

Xaa Lys Tyr Val Asp Trp His Tyr Leu Val Cys Asn Tyr Gly Pro Ser
145 150 155 160

Gly Asn Phe Asn Glu Leu Tyr Xaa Thr Lys
165 170

<210> 124
<211> 166
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(166)
<223> where Xaa is any amino acid

<400> 124

Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala Cys Lys
1 5 10 15

Tyr Gly Thr Ser Lys Pro Asn Cys Gly Asn Val Val Ser Tyr Gly Val
20 25 30

Thr Glu Lys Gln Phe Ile Leu Lys His Asn Asp Phe Arg Xaa Xaa Ala
35 40 45

Arg Gly Leu Glu Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys
50 55 60

Asn Met Asn Leu Val Trp Asn Glu Leu Ala Ile Ala Gln Thr Trp Ala
65 70 75 80

Gln Cys Tyr Gly His Asp Thr Cys Lys Asp Lys Tyr Asn Val Gly Gln
85 90 95

Asn Ile Ala Val Xaa Gly Ser Thr Ala Ala Tyr Thr Leu Val Lys Trp
100 105 110

Glu Glu Val Lys Asp Xaa Asn Pro Trp Gly Asn Xaa Xaa Lys Gly His
115 120 125

Tyr Thr Gln Met Val Trp Ala Thr Lys Glu Ile Gly Cys Gly Ser Ile
130 135 140

Lys Tyr Val Trp His Tyr Leu Val Cys Asn Tyr Gly Pro Gly Asn Phe
145 150 155 160

Asn Glu Val Xaa Xaa Lys
165

<210> 125
<211> 156
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(156)
<223> where Xaa is any amino acid

<400> 125

Asn Asn Tyr Cys Lys Ile Lys Cys Xaa Gly Thr His Thr Cys Lys Tyr
1 5 10 15

Gly Thr Ser Lys Pro Asn Cys Gly Val Val Gly Leu Thr Lys Gln Glu
20 25 30

Phe Ile Leu Lys His Asn Phe Phe Arg Xaa Xaa Ala Arg Gly Leu Glu
35 40 45

Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys Met Leu Val Trp
50 55 60

Asn Asp Glu Leu Ala Ile Ala Gln Val Trp Ala Asn Asn Cys Gln Tyr
65 70 75 80

Gly His Asp Cys Arg Ala Lys Tyr Val Gly Gln Asn Ile Ala Ile Thr
85 90 95

Ala Xaa Xaa Xaa Xaa Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr
100 105 110

Gln Asn Lys Gly His Tyr Thr Gln Met Val Trp Ala Thr Lys Glu Ile
115 120 125

Gly Cys Gly Ser Ile Lys Tyr Ile Trp His Lys His Tyr Leu Val Cys
130 135 140

Asn Tyr Gly Pro Gly Asn Asn Glu Leu Xaa Xaa Lys
145 150 155

<210> 126
<211> 155
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(155)
<223> where Xaa is any amino acid

100H94~2.TXT

<400> 126

Asn Asn Tyr Cys Lys Ile Lys Cys Lys Gly Ile His Thr Cys Lys Tyr
1 5 10 15Gly Thr Ser Lys Pro Asn Cys Gly Val Val Gly Leu Thr Lys Gln Glu
20 25 30Glu Ile Leu Lys His Asn Xaa Phe Arg Xaa Xaa Ala Arg Gly Leu Glu
35 40 45Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys Met Leu Val Trp
50 55 60Asn Asp Glu Leu Ala Ile Ala Gln Val Trp Ala Asn Gln Cys Asn Tyr
65 70 75 80Gly His Asp Cys Arg Ala Lys Tyr Val Gly Gln Asn Ile Ala Thr Ser
85 90 95Ala Xaa Xaa Xaa Xaa Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr
100 105 110Gln Asn Lys Gly His Tyr Thr Gln Met Val Trp Ala Thr Lys Glu Ile
115 120 125Gly Cys Gly Ser Tyr Ile Asp Trp His Arg His Tyr Leu Val Cys Asn
130 135 140Tyr Gly Pro Gly Asn Asn Glu Ile Xaa Xaa Lys
145 150 155

<210> 127

<211> 41

<212> DNA

<213> Vespa vulgaris

<400> 127

accacagcct ccagcgaaga atatgaaaaa tttggatgg a

41

<210> 128

<211> 41

<212> DNA

<213> Vespa vulgaris

<400> 128

tccataccaa attttcata ttcttcgtcg gaggctgtgg t

41

<210> 129

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Ves v 5 mutant 1 sense primer

<400> 129
ccagcggcta atatgaaaaa t

21

<210> 130
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Ves v 5 mutant 1 non-sense primer

<400> 130
catattcttc gctggaggct g

21

<210> 131
<211> 41
<212> DNA
<213> Vespa vulgaris

<400> 131
ggctaatcaa tgtcaatatg gtcacgatac ttgcagggat g

41

<210> 132
<211> 41
<212> DNA
<213> Vespa vulgaris

<400> 132
catccctgca agtatcgtga ccatattgac attgatttagc c

41

<210> 133
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Ves v 5 mutant 2 sense primer

<400> 133
tgtcaatatg gtcacgatac t

21

<210> 134
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Ves v 5 mutant 2 non-sense primer

<400> 134
gtgaccatat tgacatttgat t

21

<210> 135
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 135
attcatcagc tgcgagatag g

21

100H94~2.TXT

<210> 136
<211> 615
<212> DNA
<213> *Vespula vulgaris*

<400> 136
aacaattatt gtaaaataaa atgtttgaaa ggaggtgtcc atactgcctg caaatatgga 60
agtcttaaac cgaattgcgg taataaggta gtggtacccct atggtctaac gaaacaagag 120
aaacaagaca tcttaagga gcacaatgac tttagacaaa aaattgcacg aggattggag 180
actagaggtta atcctggacc acagcctcca gcgaagaata tgaaaaattt ggtatggaac 240
gacgagttag cttatgtcgc ccaagtgtgg gctaatcaat gtcaatatgg tcacgatact 300
tgcaggatg tagcaaaata tcaggttggc caaaacgtag ccttaacagg tagcacggct 360
gctaaatacg atgatccagt taaactagtt aaaatgtggg aagatgaagt gaaagattat 420
aatcctaaga aaaagtttc gggaaacgac tttctgaaaa ccggccattt cactcaaatg 480
gtttgggcta acaccaagga agttgggtgt ggaagtataa aatacattca agagaaatgg 540
cacaacattt accttgtatg taattatggc cccagcggaa actttaagaa tgaggaactt 600
tatcaaacaa agtaa 615

<210> 137
<211> 591
<212> DNA
<213> *Dermatophagoides pteronyssinus*

<400> 137
cacaatttct tctttttcc ttactactga tcattatct gaaaacaaaa ccaaacaaac 60
cattcaaaat gatgtacaaa attttgttc tttcattgtt ggtcgccagcc gttgctcg 120
atcaagtcga tgtcaaagat tgtgccaatc atgaaatcaa aaaagtttg gtaccaggat 180
gccatggttc agaaccatgt atcattcatc gtggtaaacc attccaattt gaagccgtt 240
tcgaagccaa caaaaacaca aaaacggcta aaattgaaat caaagcctca atcgatgg 300
tagaagttga tgccccggat atcgatccaa atgcatgcca ttacatgaaa tgcccatgg 360
ttaaaggaca acaatatgat attaaatata catggatgt tccgaaaatt gcaccaaaat 420
ctgaaaatgt tgtcgtaact gttaaagttt tgggtgatga tgggttttgcgcgtgcta 480
ttgctactca tgctaaaatc cgcgatttttcaaaa tttattgatt ttgtatcac 540
aaatgattga tttttttcc aaaaaaaaaaaa taaaataaaat tttgggattt c 591

<210> 138
<211> 146
<212> PRT
<213> *Dermatophagoides pteronyssinus*

<300>
<308> GenBank / P49278
<309> 1996-02-01
<313> (1)..(146)

100H94~2.TXT

<400> 138

Met Met Tyr Lys Ile Leu Cys Leu Ser Leu Leu Val Ala Ala Val Ala
 1 5 10 15

Arg Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys
 20 25 30

Val Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg
 35 40 45

Gly Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr
 50 55 60

Lys Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val
 65 70 75 80

Asp Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro
 85 90 95

Leu Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro
 100 105 110

Lys Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met
 115 120 125

Gly Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile
 130 135 140

Arg Asp
 145

<210> 139
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

<400> 139
 cagactaatt cgagctcggt accc

24

<210> 140
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<220>
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<400> 140
 tttcctgaaa tgtttcaac act

23

<210> 141
 <211> 23

100H94~2.TXT

<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 141
aacatttcag gaaatggagg gcc 23

<210> 142
<211> 24
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<220>
<223> primer

<400> 142
cacgtagttg aaaggaggc cttc 24

<210> 143
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<400> 143
tttcaactac gtgaaggaca gagt 24

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ggagatgctc tccaatgtgt cgcc 24

<210> 145
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<220>
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<400> 145
ggagagcatc tccaaacgaga taaa 24

<210> 146
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 146
accttgcttca acctgctctg cctt 24

100H94~2.TXT

<210> 147
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<212> DNA
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<220>
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<400> 147
caggttgaag caagtaaaga aatg 24

<210> 148
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 148
gcaggtcgac tctagaggat ccat 24

<210> 149
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 149
cagactaatt cgacgtcggt accc 24

<210> 150
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 150
cagtcgcggt gctgggataa caga 24

<210> 151
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 151
ccagcaccgc gactgttcaa ggcc 24

<210> 152
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

100H94~2.TXT

<223> primer		
<400> 152		24
cactatggtt atctcggtt agat		
<210> 153		
<211> 24		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 153		24
gagataacca tagtggcaac tggt		
<210> 154		
<211> 45		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 154		45
ttactgaatt cattagttgt aggcattccgg gtggcctttg aggtta		
<210> 155		
<211> 42		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 155		42
ccgctcgaga aaagagatca agtcgatgtc gccgattgtg cc		
<210> 156		
<211> 39		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 156		39
cgttctagac tattaatcgc ggatttttagc atgagttgc		
<210> 157		
<211> 67		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 157		60
ccgctcgaga aaagagatca agtcgatgtc aaagattgtg ccaaccatga aatcaaagaa		
gttttgg		67

100H94~2.TXT

<210> 158
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 158
cgttctagac tattaatcgc ggatttttagc atgagttgc 39

<210> 159
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 159
cggggtagcca ggatgtcatg gttcagaacc atgtatcatt aaccgtggta aacc 54

<210> 160
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> sense primer

<400> 160
ggcgattaaag ttgggtaacg ccaggg 26

<210> 161
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 161
gcctcaatcg atggtttatac agttgatgtt ccc 33

<210> 162
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 162
gggaacatca actgataaac catcgattga ggc 33

<210> 163
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

100H94~2.TXT

<400> 163	catggcatgc aattacatga aatgcccatt gg	32
<210> 164		
<211> 27		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> anti-sense primer		
<400> 164	ggaaacagct atgaccatga ttacgcc	27
<210> 165		
<211> 50		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 165	ctacgcatgc cattacatga aatgcccatt ggttaatgga caacaatatg	50
<210> 166		
<211> 46		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> OB27 sense primer		
<400> 166	ggaattcctc gagaaaagag atcaagtcga tgtcaaagat tgtgcc	46
<210> 167		
<211> 129		
<212> PRT		
<213> Dermatophagoides pteronyssinus		
<400> 167		
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val		
1 5 10 15		
Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly		
20 25 30		
Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys		
35 40 45		
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp		
50 55 60		
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Val Lys Cys Pro Leu		
65 70 75 80		
Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys		

85

100H94~2.TXT
90

95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
100 105 110

Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 168

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 168

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
100 105 110

Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 169

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 169

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1 5 10 15

100H94~2.TXT

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Ser Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Ile Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 170

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 170

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Ser Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
100 105 110

100H94~2.TXT
Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 171
<211> 129
<212> PRT
<213> Dermatophagoides pteronyssinus

<400> 171

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 172
<211> 128
<212> PRT
<213> Dermatophagoides pteronyssinus

<400> 172

Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val Leu
1 5 10 15

Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly Lys
20 25 30

Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys Thr
35 40 45

100H94~2.TXT

Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp Val
50 55 60

Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu Val
65 70 75 80

Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys Ile
85 90 95

Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly Asp
100 105 110

Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg Asp
115 120 125

<210> 173

<211> 146

<212> PRT

<213> Dermatophagoides farinae

<400> 173

Met Ile Ser Lys Ile Leu Cys Leu Ser Leu Leu Val Ala Ala Val Val
1 5 10 15

Ala Asp Gln Val Asp Val Lys Asp Cys Ala Asn Asn Glu Ile Lys Lys
20 25 30

Val Met Val Asp Gly Cys His Gly Ser Asp Pro Cys Ile Ile His Arg
35 40 45

Gly Lys Pro Phe Thr Leu Glu Ala Leu Phe Asp Ala Asn Gln Asn Thr
50 55 60

Lys Thr Ala Lys Ile Glu Ile Lys Ala Ser Leu Asp Gly Leu Glu Ile
65 70 75 80

Asp Val Pro Gly Ile Asp Thr Asn Ala Cys His Phe Met Lys Cys Pro
85 90 95

Leu Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro
100 105 110

Lys Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Leu Ile
115 120 125

Gly Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile
130 135 140

Arg Asp
145

100H94~2.TXT

<210> 174

<211> 138

<212> PRT

<213> Dermatophagoides farinae

<400> 174

Ser Leu Leu Val Ala Ala Val Val Ala Asp Gln Val Asp Val Lys Asp
1 5 10 15

Cys Ala Asn Asn Glu Ile Lys Lys Val Met Val Asp Gly Cys His Gly
20 25 30

Ser Asp Pro Cys Ile Ile His Arg Gly Lys Pro Phe Thr Leu Glu Ala
35 40 45

Leu Phe Asp Ala Asn Gln Asn Ser Thr Thr Ala Lys Ile Glu Ile Lys
50 55 60

Ala Ser Leu Asp Gly Leu Glu Ile Asp Val Pro Gly Ile Asp Thr Asn
65 70 75 80

Ala Cys His Phe Met Lys Cys Pro Leu Val Lys Gly Gln Gln Tyr Asp
85 90 95

Ala Lys Tyr Thr Trp Asn Val Pro Lys Ile Ala Pro Lys Ser Glu Asn
100 105 110

Val Val Val Thr Val Lys Leu Val Gly Asp Asn Gly Val Leu Ala Cys
115 120 125

Ala Ile Ala Thr His Ala Lys Ile Arg Asp
130 135

<210> 175

<211> 129

<212> PRT

<213> Dermatophagoides farinae

<400> 175

Asp Gln Val Asp Val Lys Asp Cys Ala Asn Asn Glu Ile Lys Lys Val
1 5 10 15

Met Val Asp Gly Cys His Gly Ser Asp Pro Cys Ile Ile His Arg Gly
20 25 30

Lys Pro Phe Thr Leu Glu Ala Leu Phe Asp Ala Asn Gln Asn Thr Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Leu Asp Gly Leu Glu Ile Asp
50 55 60

Val Pro Gly Ile Asp Thr Asn Ala Cys His Phe Val Lys Cys Pro Leu
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65

70

75

80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Leu Ile Gly
 100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
 115 120 125

Asp

<210> 176

<211> 129

<212> PRT

<213> Dermatophagoides farinae

<400> 176

Asp Gln Val Asp Val Lys Asp Cys Ala Asn Asn Glu Ile Lys Lys Val
 1 5 10 15

Met Val Asp Gly Cys His Gly Ser Asp Pro Cys Ile Ile His Arg Gly
 20 25 30

Lys Pro Phe Thr Leu Glu Ala Leu Phe Asp Ala Asn Gln Asn Thr Lys
 35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Leu Asp Gly Leu Glu Ile Asp
 50 55 60

Val Pro Gly Ile Asp Thr Asn Ala Cys His Phe Met Lys Cys Pro Leu
 65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ala Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Leu Val Gly
 100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
 115 120 125

Asp

<210> 177

<211> 145

<212> PRT

<213> Euroglyphus maynei

<400> 177

100H94~2.TXT

Met Tyr Lys Ile Leu Cys Leu Ser Leu Leu Val Ala Ala Val Ala Ala
1 5 10 15

Asp Gln Val Asp Ile Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
20 25 30

Met Val Pro Gly Cys Lys Gly Ser Glu Pro Cys Val Ile His Arg Gly
35 40 45

Thr Ala Phe Gln Leu Glu Ala Val Phe Asp Ala Asn Gln Asn Ser Asn
50 55 60

Ala Ala Lys Ile Glu Ile Lys Ala Thr Ile Asp Gly Val Glu Ile Asp
65 70 75 80

Val Pro Gly Ile Asp Asn Asn Leu Cys His Phe Met Lys Cys Pro Leu
85 90 95

Val Lys Gly Gln Glu Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Arg
100 105 110

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Leu Leu Gly
115 120 125

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
130 135 140

Asp
145

<210> 178
<211> 135
<212> PRT
<213> *Euroglyphus maynei*

<400> 178

Val Ala Ala Val Ala Ala Asp Gln Val Asp Val Lys Asp Cys Ala Asn
1 5 10 15

His Glu Ile Lys Lys Val Met Val Pro Gly Cys Lys Gly Ser Glu Pro
20 25 30

Cys Val Ile His Arg Gly Thr Ala Phe Gln Leu Glu Ala Val Phe Asp
35 40 45

Ala Asn Gln Asn Ser Asn Ala Ala Lys Ile Glu Ile Lys Ala Thr Ile
50 55 60

Asp Gly Val Glu Ile Asp Val Pro Gly Ile Asp Asn Asn Leu Cys His
65 70 75 80

Phe Met Lys Cys Pro Leu Val Lys Gly Gln Glu Tyr Asp Ile Lys Tyr
 85 90 95

Thr Trp Asn Val Pro Arg Ile Ala Pro Lys Ser Glu Asn Val Val Val
 100 105 110

Thr Val Lys Leu Leu Gly Asp Asn Gly Val Leu Ala Cys Ala Ile Ala
 115 120 125

Thr His Ala Lys Ile Arg Asp
 130 135

<210> 179

<211> 320

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 179

Met Lys Ile Val Leu Ala Ile Ala Ser Leu Leu Ala Leu Ser Ala Val
 1 5 10 15

Tyr Ala Arg Pro Ser Ser Ile Lys Thr Phe Glu Glu Tyr Lys Lys Ala
 20 25 30

Phe Asn Lys Ser Tyr Ala Thr Phe Glu Asp Glu Glu Ala Ala Arg Lys
 35 40 45

Asn Phe Leu Glu Ser Val Lys Tyr Val Gln Ser Asn Gly Gly Ala Ile
 50 55 60

Asn His Leu Ser Asp Leu Ser Leu Asp Glu Phe Lys Asn Arg Phe Leu
 65 70 75 80

Met Ser Ala Glu Ala Phe Glu His Leu Lys Thr Gln Phe Asp Leu Asn
 85 90 95

Ala Glu Thr Asn Ala Cys Ser Ile Asn Gly Asn Ala Pro Ala Glu Ile
 100 105 110

Asp Leu Arg Gln Met Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly
 115 120 125

Cys Gly Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala
 130 135 140

Tyr Leu Ala Tyr Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu
 145 150 155 160

Val Asp Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg
 165 170 175

Gly Ile Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr
 Page 137

180

100H94~2.TXT

185

190

Arg Tyr Val Ala Arg Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg
195 200 205

Phe Gly Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys
210 215 220

Ile Arg Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile
225 230 235 240

Gly Ile Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Arg Thr Ile
245 250 255

Ile Gln Arg Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile
260 265 270

Val Gly Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn
275 280 285

Ser Trp Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala
290 295 300

Asn Ile Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
305 310 315 320

<210> 180

<211> 321

<212> PRT

<213> Euroglyphus maynei

<400> 180

Met Lys Ile Ile Leu Ala Ile Ala Ser Leu Leu Val Leu Ser Ala Val
1 5 10 15

Tyr Ala Arg Pro Ala Ser Ile Lys Thr Phe Glu Glu Phe Lys Lys Ala
20 25 30

Phe Asn Lys Thr Tyr Ala Thr Pro Glu Lys Glu Glu Val Ala Arg Lys
35 40 45

Asn Phe Leu Glu Ser Leu Lys Tyr Val Glu Ser Asn Lys Gly Ala Ile
50 55 60

Asn His Leu Ser Asp Leu Ser Leu Asp Glu Phe Lys Asn Gln Phe Leu
65 70 75 80

Met Asn Ala Asn Ala Phe Glu Gln Leu Lys Thr Gln Phe Asp Leu Asn
85 90 95

Ala Glu Thr Tyr Ala Cys Ser Ile Asn Ser Val Ser Leu Pro Ser Glu
100 105 110

100H94~2.TXT

Leu Asp Leu Arg Ser Leu Arg Thr Val Thr Pro Ile Arg Met Gln Gly
115 120 125

Gly Cys Gly Ser Cys Trp Ala Phe Ser Gly Val Ala Ser Thr Glu Ser
130 135 140

Ala Tyr Leu Ala Tyr Arg Asn Met Ser Leu Asp Leu Ala Glu Gln Glu
145 150 155 160

Leu Val Asp Cys Ala Ser Gln Asn Gly Cys His Gly Asp Thr Ile Pro
165 170 175

Arg Gly Ile Glu Tyr Ile Gln Gln Asn Gly Val Val Gln Glu His Tyr
180 185 190

Tyr Pro Tyr Val Ala Arg Glu Gln Ser Cys His Arg Pro Asn Ala Gln
195 200 205

Arg Tyr Gly Leu Lys Asn Tyr Cys Gln Ile Ser Pro Pro Asp Ser Asn
210 215 220

Lys Ile Arg Gln Ala Leu Thr Gln Thr His Thr Ala Val Ala Val Ile
225 230 235 240

Ile Gly Ile Lys Asp Leu Asn Ala Phe Arg His Tyr Asp Gly Arg Thr
245 250 255

Ile Met Gln His Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn
260 265 270

Ile Val Gly Tyr Gly Asn Thr Gln Gly Val Asp Tyr Trp Ile Val Arg
275 280 285

Asn Ser Trp Asp Thr Thr Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala
290 295 300

Ala Asn Ile Asn Leu Met Met Ile Glu Gln Tyr Pro Tyr Val Val Met
305 310 315 320

Leu

<210> 181
<211> 246
<212> PRT
<213> *Euroglyphus maynei*

<400> 181

Lys Asn Gln Phe Leu Met Asn Ala Asn Ala Phe Glu Gln Leu Lys Thr
1 5 10 15

100H94~2.TXT

Gln Phe Asp Leu Asn Ala Glu Thr Tyr Ala Cys Ser Ile Asn Ser Val
20 25 30

Ser Leu Pro Ser Glu Leu Asp Leu Arg Ser Leu Arg Thr Val Thr Pro
35 40 45

Ile Arg Met Gln Gly Gly Cys Ser Cys Trp Ala Phe Ser Gly Val
50 55 60

Ala Ser Thr Glu Ser Ala Tyr Leu Ala Tyr Arg Asn Met Ser Leu Asp
65 70 75 80

Leu Ala Glu Gln Glu Leu Val Asp Cys Ala Ser Gln Asn Gly Cys His
85 90 95

Gly Asp Thr Ile Pro Arg Gly Ile Glu Tyr Ile Gln Gln Asn Gly Val
100 105 110

Val Gln Glu His Tyr Tyr Pro Tyr Val Ala Arg Glu Gln Ser Cys His
115 120 125

Arg Pro Asn Ala Gln Arg Tyr Gly Leu Lys Asn Tyr Cys Gln Ile Ser
130 135 140

Pro Pro Asp Ser Asn Lys Ile Arg Gln Ala Leu Thr Gln Thr His Thr
145 150 155 160

Ala Val Ala Val Ile Ile Gly Ile Lys Asp Leu Asn Ala Phe Arg His
165 170 175

Tyr Asp Gly Arg Thr Ile Met Gln His Asp Asn Gly Tyr Gln Pro Asn
180 185 190

Tyr His Ala Val Asn Ile Val Gly Tyr Gly Asn Thr Gln Gly Val Asp
195 200 205

Tyr Trp Ile Val Arg Asn Ser Trp Asp Thr Thr Trp Gly Asp Asn Gly
210 215 220

Tyr Gly Tyr Phe Ala Ala Asn Ile Asn Leu Met Met Ile Glu Gln Tyr
225 230 235 240

Pro Tyr Val Val Met Leu
245

<210> 182
<211> 327
<212> PRT
<213> Euroglyphus maynei

<400> 182

100H94~2.TXT
Lys His Leu Ser Thr Ile Met Lys Ile Ile Leu Ala Ile Ala Ser Leu
1 5 10 15

Leu Val Leu Ser Ala Val Tyr Ala Arg Pro Ala Ser Ile Lys Thr Phe
20 25 30

Glu Glu Phe Lys Lys Ala Phe Asn Lys Ser Tyr Ala Thr Pro Glu Lys
35 40 45

Glu Glu Val Ala Arg Lys Asn Phe Leu Glu Ser Leu Lys Tyr Val Glu
50 55 60

Ser Asn Lys Gly Ala Ile Asn His Leu Ser Asp Leu Ser Leu Asp Glu
65 70 75 80

Phe Lys Asn Gln Phe Leu Met Asn Ala Asn Ala Phe Glu Gln Leu Lys
85 90 95

Thr Gln Phe Asp Leu Asn Ala Glu Thr Tyr Ala Cys Ser Ile Asn Ser
100 105 110

Val Ser Leu Pro Ser Glu Leu Asp Leu Arg Ser Leu Arg Thr Val Thr
115 120 125

Pro Ile Arg Met Gln Gly Gly Cys Gly Ser Cys Trp Ala Phe Ser Gly
130 135 140

Val Ala Ser Thr Glu Ser Ala Tyr Leu Ala Tyr Arg Asn Met Ser Leu
145 150 155 160

Asp Leu Ala Glu Gln Glu Leu Val Asp Cys Ala Ser Gln Asn Gly Cys
165 170 175

His Gly Asp Thr Ile Pro Arg Gly Ile Glu Tyr Ile Gln Gln Asn Gly
180 185 190

Val Val Gln Glu His Tyr Tyr Pro Tyr Val Ala Arg Glu Gln Ser Cys
195 200 205

His Arg Pro Asn Ala Gln Arg Tyr Gly Leu Lys Asn Tyr Cys Gln Ile
210 215 220

Ser Pro Pro Asp Ser Asn Lys Ile Arg Gln Ala Leu Thr Gln Thr His
225 230 235 240

Thr Ala Val Ala Val Ile Ile Gly Ile Lys Asp Leu Asn Ala Phe Arg
245 250 255

His Tyr Asp Gly Arg Thr Ile Met Gln His Asp Asn Gly Tyr Gln Pro
260 265 270

Asn Tyr His Ala Val Asn Ile Val Gly Tyr Gly Asn Thr Gln Gly Val
 275 280 285

Asp Tyr Trp Ile Val Arg Asn Ser Trp Asp Thr Thr Trp Gly Asp Asn
 290 295 300

Gly Tyr Gly Tyr Phe Ala Ala Asn Ile Asn Leu Met Met Ile Glu Gln
 305 310 315 320

Tyr Pro Tyr Val Val Ile Leu
 325

<210> 183

<211> 321

<212> PRT

<213> Dermatophagoides farinae

<400> 183

Met Lys Phe Val Leu Ala Ile Ala Ser Leu Leu Ala Leu Ser Thr Val
 1 5 10 15

Tyr Ala Arg Pro Ala Ser Ile Lys Thr Phe Glu Glu Phe Lys Lys Ala
 20 25 30

Phe Asn Lys Asn Tyr Ala Thr Val Glu Glu Glu Glu Val Ala Arg Lys
 35 40 45

Asn Phe Leu Glu Ser Leu Lys Tyr Val Glu Ala Asn Lys Gly Ala Ile
 50 55 60

Asn His Leu Ser Asp Leu Ser Leu Asp Glu Phe Lys Asn Arg Phe Leu
 65 70 75 80

Met Ser Ala Glu Ala Phe Glu Gln Leu Lys Thr Gln Phe Asp Leu Asn
 85 90 95

Ala Glu Thr Ser Ala Cys Arg Ile Asn Ser Val Asn Val Pro Ser Glu
 100 105 110

Leu Asp Leu Arg Ser Leu Arg Thr Val Thr Pro Ile Arg Met Gln Gly
 115 120 125

Gly Cys Gly Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser
 130 135 140

Ala Tyr Leu Ala Tyr Arg Asn Thr Ser Leu Asp Leu Ser Glu Gln Glu
 145 150 155 160

Leu Val Asp Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro
 165 170 175

Arg Gly Ile Glu Tyr Ile Gln Gln Asn Gly Val Val Glu Glu Arg Ser
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100H94~2.TXT

190

Tyr Pro Tyr Val Ala Arg Glu Gln Arg Cys Arg Arg Pro Asn Ser Gln
195 200 205

His Tyr Gly Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asp Val Lys
210 215 220

Gln Ile Arg Glu Ala Leu Thr Gln Thr His Thr Ala Ile Ala Val Ile
225 230 235 240

Ile Gly Ile Lys Asp Leu Arg Ala Phe Gln His Tyr Asp Gly Arg Thr
245 250 255

Ile Ile Gln His Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn
260 265 270

Ile Val Gly Tyr Gly Ser Thr Gln Gly Asp Asp Tyr Trp Ile Val Arg
275 280 285

Asn Ser Trp Asp Thr Thr Trp Gly Asp Ser Gly Tyr Gly Tyr Phe Gln
290 295 300

Ala Gly Asn Asn Leu Met Met Ile Glu Gln Tyr Pro Tyr Val Val Ile
305 310 315 320

Met

<210> 184

<211> 211

<212> PRT

<213> Euroglyphus maynei

<400> 184

Thr Tyr Ala Cys Ser Ile Asn Ser Val Ser Leu Pro Ser Glu Leu Asp
1 5 10 15

Leu Arg Ser Leu Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys
20 25 30

Gly Ser Cys Trp Ala Phe Ser Gly Val Ala Ser Thr Glu Ser Ala Tyr
35 40 45

Leu Ala Tyr Arg Asn Met Ser Leu Asp Leu Ala Glu Gln Glu Leu Val
50 55 60

Asp Cys Ala Ser Gln Asn Gly Cys His Gly Asp Thr Ile Pro Arg Gly
65 70 75 80

Ile Glu Tyr Ile Gln Gln Asn Gly Val Val Gln Glu His Tyr Tyr Pro
85 90 95

100H94~2.TXT

Tyr Val Ala Arg Glu Gln Ser Cys His Arg Pro Asn Ala Gln Arg Tyr
100 105 110

Gly Leu Lys Asn Tyr Cys Gln Ile Ser Pro Pro Asp Ser Asn Lys Ile
115 120 125

Arg Gln Ala Leu Thr Gln Thr His Thr Ala Val Ala Val Ile Ile Gly
130 135 140

Ile Lys Asp Leu Asn Ala Phe Arg His Tyr Asp Gly Arg Thr Ile Met
145 150 155 160

Gln His Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val
165 170 175

Gly Tyr Gly Asn Thr Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser
180 185 190

Trp Asp Thr Thr Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn
195 200 205

Ile Asn Leu
210

<210> 185

<211> 210

<212> PRT

<213> Dermatophagoides farinae

<400> 185

Ser Ala Cys Arg Ile Asn Ser Val Asn Val Pro Ser Glu Leu Asp Leu
1 5 10 15

Arg Ser Leu Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
20 25 30

Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
35 40 45

Ala Tyr Arg Asn Thr Ser Leu Asp Leu Ser Glu Gln Glu Leu Val Asp
50 55 60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
65 70 75 80

Glu Tyr Ile Gln Gln Asn Gly Val Val Glu Glu Arg Ser Tyr Pro Tyr
85 90 95

Val Ala Arg Glu Gln Gln Cys Arg Arg Pro Asn Ser Gln His Tyr Gly
100 105 110

100H94~2.TXT

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asp Val Lys Gln Ile Arg
115 120 125

Glu Ala Leu Thr Gln Thr His Thr Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Arg Ala Phe Gln His Tyr Asp Gly Arg Thr Ile Ile Gln
145 150 155 160

His Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Gly Ser Thr Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

Asp Thr Thr Trp Gly Asp Ser Gly Tyr Gly Tyr Phe Gln Ala Gly Asn
195 200 205

Asn Leu
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<210> 186

<211> 312

<212> PRT

<213> Phleum pratense

<400> 186

Met Ala Val His Gln Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Gly Ser Tyr Ala Ala Asp Leu Gly Tyr Gly Pro
20 25 30

Ala Thr Pro Ala Ala Pro Ala Ala Gly Tyr Thr Pro Ala Thr Pro Ala
35 40 45

Ala Pro Ala Gly Ala Glu Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln
50 55 60

Lys Leu Ile Glu Lys Ile Asn Ala Gly Phe Lys Ala Ala Leu Ala Ala
65 70 75 80

Ala Ala Gly Val Pro Pro Ala Asp Lys Tyr Arg Thr Phe Val Ala Thr
85 90 95

Phe Gly Ala Ala Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Gly Glu
100 105 110

Pro Lys Gly Ala Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys
115 120 125

Leu Asp Ala Ala Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr
 130 135 140

Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Val Ser Glu Ala Leu
 145 150 155 160

Arg Ile Ile Ala Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala
 165 170 175

Glu Glu Val Lys Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys
 180 185 190

Val Asp Ala Ala Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro
 195 200 205

Ala Asn Asp Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Asp Ala Ile
 210 215 220

Lys Ala Ser Thr Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala
 225 230 235 240

Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala
 245 250 255

Pro Glu Val Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile
 260 265 270

Thr Ala Met Ser Glu Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Ala
 275 280 285

Thr Ala Thr Ala Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr
 290 295 300

Ala Ala Thr Gly Gly Tyr Lys Val
 305 310

<210> 187
 <211> 312
 <212> PRT
 <213> Phleum pratense

<400> 187

Met Ala Val His Gln Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Leu Gly Tyr Gly Pro
 20 25 30

Ala Thr Pro Ala Ala Pro Ala Ala Gly Tyr Thr Pro Ala Thr Pro Ala
 35 40 45

Ala Pro Ala Glu Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln
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100H94~2.TXT

60

Lys Leu Ile Glu Lys Ile Asn Ala Gly Phe Lys Ala Ala Leu Ala Ala
65 70 75 80

Ala Ala Gly Val Gln Pro Ala Asp Lys Tyr Arg Thr Phe Val Ala Thr
85 90 95

Phe Gly Ala Ala Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Gly Glu
100 105 110

Pro Lys Gly Ala Ala Glu Ser Ser Lys Ala Ala Leu Thr Ser Lys
115 120 125

Leu Asp Ala Ala Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr
130 135 140

Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu
145 150 155 160

Arg Ile Ile Ala Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala
165 170 175

Glu Glu Val Lys Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys
180 185 190

Val Asp Ala Ala Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro
195 200 205

Ala Asn Asp Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Asp Ala Ile
210 215 220

Lys Ala Ser Thr Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala
225 230 235 240

Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala
245 250 255

Pro Glu Val Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile
260 265 270

Thr Ala Met Ser Glu Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Ala
275 280 285

Thr Ala Thr Ala Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr
290 295 300

Ala Ala Thr Gly Gly Tyr Lys Val
305 310

100H94~2.TXT

<211> 286

<212> PRT

<213> Phleum pratense

<400> 188

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Asp Ala Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Gly Ala Gly Val Gln Pro Ala Asp Lys Tyr
 50 55 60

Arg Thr Phe Val Ala Thr Phe Gly Pro Ala Ser Asn Lys Ala Phe Ala
 65 70 75 80

Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser Lys
 85 90 95

Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr Lys
 100 105 110

Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala
 115 120 125

Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val His
 130 135 140

Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly Glu
 145 150 155 160

Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala Thr
 165 170 175

Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Ala
 180 185 190

Ala Phe Asn Asp Glu Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu Ser
 195 200 205

Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala
 210 215 220

Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu Thr
 225 230 235 240

Ala Leu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Gln Lys Ala Ala
 245 250 255

100H94~2.TXT

Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Ala Val Gly Ala
260 265 270

Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 189
<211> 333
<212> PRT
<213> Poa pratensis
<400> 189

Met Ala Val His Gln Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Val Gly Tyr Gly Ala
20 25 30

Pro Ala Thr Leu Ala Thr Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
35 40 45

Tyr Thr Pro Ala Ala Pro Ala Gly Ala Ala Pro Lys Ala Thr Thr Asp
50 55 60

Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly Phe Lys Ala Ala Val
65 70 75 80

Ala Ala Ala Ala Gly Val Pro Ala Val Asp Lys Tyr Lys Thr Phe Val
85 90 95

Ala Thr Phe Gly Thr Ala Ser Asn Lys Ala Phe Ala Glu Ala Leu Ser
100 105 110

Thr Glu Pro Lys Gly Ala Ala Ala Ser Ser Asn Ala Val Leu Thr
115 120 125

Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr Lys Ser Ala Glu Gly
130 135 140

Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu
145 150 155 160

Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val His Ala Val Lys Pro
165 170 175

Ala Gly Glu Glu Val Lys Ala Ile Pro Ala Gly Glu Leu Gln Val Ile
180 185 190

Asp Lys Val Asp Ala Ala Phe Lys Val Ala Ala Thr Ala Ala Asn Ala
195 200 205

100H94~2.TXT

Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Asp
210 215 220

Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Gln Ser Tyr Lys Phe Ile
225 230 235 240

Pro Ala Leu Glu Ala Ala Val Lys Gln Ser Tyr Ala Ala Thr Val Ala
245 250 255

Thr Ala Pro Ala Val Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys
260 265 270

Ala Ile Thr Ala Met Ser Gln Ala Gln Lys Ala Ala Lys Pro Ala Ala
275 280 285

Ala Val Thr Ala Thr Ala Thr Gly Ala Val Gly Ala Ala Thr Gly Ala
290 295 300

Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Ala Gly Gly Tyr Lys
305 310 315 320

Thr Gly Ala Ala Thr Pro Thr Ala Gly Gly Tyr Lys Val
325 330

<210> 190

<211> 307

<212> PRT

<213> Poa pratensis

<400> 190

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Val Ala Leu Val
1 5 10 15

Val Gly Pro Ala Ala Ser Tyr Ala Ala Asp Leu Ser Tyr Gly Ala Pro
20 25 30

Ala Thr Pro Ala Ala Pro Ala Ala Gly Tyr Thr Pro Ala Ala Pro Ala
35 40 45

Gly Ala Ala Pro Lys Ala Thr Thr Asp Glu Gln Lys Met Ile Glu Lys
50 55 60

Ile Asn Val Gly Phe Lys Ala Ala Val Ala Ala Ala Gly Gly Val Pro
65 70 75 80

Ala Ala Asn Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala Ser
85 90 95

Asn Lys Ala Phe Ala Glu Ala Leu Ser Thr Glu Pro Lys Gly Ala Ala
100 105 110

Val Asp Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr
 115 120 125

Lys Leu Ala Tyr Lys Ser Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr
 130 135 140

Asp Asp Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala Gly
 145 150 155 160

Thr Leu Glu Val His Gly Val Lys Pro Ala Ala Glu Glu Val Lys Ala
 165 170 175

Thr Pro Ala Gly Glu Leu Gln Val Ile Asp Lys Val Asp Ala Ala Phe
 180 185 190

Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe
 195 200 205

Thr Val Phe Glu Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly
 210 215 220

Gly Ala Tyr Gln Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val
 225 230 235 240

Lys Gln Ser Tyr Ala Ala Thr Val Ala Thr Ala Pro Ala Val Lys Tyr
 245 250 255

Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser Gln
 260 265 270

Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Ala Thr Gly Thr Ala Thr
 275 280 285

Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Ala Gly Gly
 290 295 300

Tyr Lys Val
 305

<210> 191
 <211> 276
 <212> PRT
 <213> Phleum pratense

<400> 191

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
 1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
 20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Gly Val
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35

40

100H94~2.TXT

45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
65 70 75 80

Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala
85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys
100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala
115 120 125

Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys
130 135 140

Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys Val Asp Ser Ala
145 150 155 160

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
165 170 175

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Ala Ser Thr
180 185 190

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala
195 200 205

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
210 215 220

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser
225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Thr Glu Ala Thr Ala Thr Ala
245 250 255

Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly
260 265 270

Gly Tyr Lys Val
275

<210> 192
<211> 276
<212> PRT
<213> Phleum pratense

100H94~2.TXT

<400> 192

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
 1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
 20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val
 35 40 45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
 50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
 65 70 75 80

Ala Glu Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala
 85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys
 100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala
 115 120 125

Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys
 130 135 140

Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys Val Asp Ser Ala
 145 150 155 160

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
 165 170 175

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Ala Ser Thr
 180 185 190

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala
 195 200 205

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
 210 215 220

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser
 225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala
 245 250 255

Thr Ser Ala Val Gly Ala Ala Thr Gly Ala Thr Thr Ala Ala Ala Gly
 260 265 270

Gly Tyr Lys Val
275

<210> 193
<211> 276
<212> PRT
<213> Phleum pratense

<400> 193

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val
35 40 45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
65 70 75 80

Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala
85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys
100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala
115 120 125

Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys
130 135 140

Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys Val Asp Ser Ala
145 150 155 160

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
165 170 175

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Ala Ser Thr
180 185 190

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala
195 200 205

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
210 215 220

100H94~2.TXT

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Phe Thr Ala Met Ser
225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Thr Glu Ala Thr Ala Thr Ala
245 250 255

Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly
260 265 270

Gly Tyr Lys Val
275

<210> 194

<211> 276

<212> PRT

<213> Phleum pratense

<400> 194

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val
35 40 45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
65 70 75 80

Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala
85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Glu
100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala
115 120 125

Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys
130 135 140

Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys Val Asp Ser Ala
145 150 155 160

Leu Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
165 170 175

100H94~2.TXT

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Ala Ser Thr
 180 185 190

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala
 195 200 205

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
 210 215 220

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Thr Ser
 225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Thr Glu Ala Thr Ala Thr Ala
 245 250 255

Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly
 260 265 270

Gly Tyr Lys Val
 275

<210> 195

<211> 276

<212> PRT

<213> Phleum pratense

<400> 195

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
 1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
 20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val
 35 40 45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
 50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
 65 70 75 80

Ala Glu Ser Ser Ser Lys Gly Ala Leu Thr Ser Lys Leu Glu Ala Ala
 85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ser Glu Gly Ala Thr Pro Glu Ala Lys
 100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala
 115 120 125

Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys
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130

135

140

Val Ile Pro Ala Gly Glu Leu Gln Phe Ile Glu Lys Val Asp Ser Ala
 145 150 155 160

Leu Lys Val Ala Ala Thr Ala Asn Ala Ala Pro Ala Asn Asp Lys
 165 170 175

Phe Thr Val Phe Glu Ala Ala Phe Asn His Ala Ile Lys Ala Ser Thr
 180 185 190

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala
 195 200 205

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
 210 215 220

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser
 225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Thr Glu Ala Thr Ala Thr Ala
 245 250 255

Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly
 260 265 270

Gly Tyr Lys Val
 275

<210> 196
 <211> 373
 <212> PRT
 <213> Poa pratensis

<400> 196

Met Asp Lys Ala Asn Gly Ala Tyr Lys Thr Ala Leu Lys Ala Ala Ser
 1 5 10 15

Ala Val Ala Pro Ala Glu Lys Phe Pro Val Phe Gln Ala Thr Phe Asp
 20 25 30

Lys Asn Leu Lys Glu Gly Leu Ser Gly Pro Asp Ala Val Gly Phe Ala
 35 40 45

Lys Lys Leu Asp Ala Phe Ile Gln Thr Ser Tyr Leu Ser Thr Lys Ala
 50 55 60

Ala Glu Pro Lys Glu Lys Phe Asp Leu Phe Val Leu Ser Leu Thr Glu
 65 70 75 80

Val Leu Arg Phe Met Ala Gly Ala Val Lys Ala Pro Pro Ala Ser Lys
 85 90 95

100H94~2.TXT

Phe Pro Ala Lys Pro Ala Pro Lys Val Ala Ala Tyr Thr Pro Ala Ala
100 105 110

Pro Ala Gly Ala Ala Pro Lys Ala Thr Thr Asp Glu Gln Lys Leu Ile
115 120 125

Glu Lys Ile Asn Val Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Gly
130 135 140

Val Pro Ala Ala Ser Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala
145 150 155 160

Ala Ser Asn Lys Ala Phe Ala Glu Ala Leu Ser Thr Glu Pro Lys Gly
165 170 175

Ala Ala Val Ala Ser Ser Lys Ala Val Leu Thr Ser Lys Leu Asp Ala
180 185 190

Ala Tyr Lys Leu Ala Tyr Lys Ser Ala Glu Gly Ala Thr Pro Glu Ala
195 200 205

Lys Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile
210 215 220

Ala Gly Thr Leu Glu Val His Gly Val Lys Pro Ala Ala Glu Glu Val
225 230 235 240

Lys Ala Ile Pro Ala Gly Glu Leu Gln Val Ile Asp Lys Val Asp Ala
245 250 255

Ala Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp
260 265 270

Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser
275 280 285

Thr Gly Gly Ala Tyr Gln Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala
290 295 300

Ala Val Lys Gln Ser Tyr Ala Ala Thr Val Ala Thr Ala Pro Ala Val
305 310 315 320

Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met
325 330 335

Ser Gln Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Val Thr Gly Thr
340 345 350

Ala Thr Ser Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Ala
355 360 365

Gly Gly Tyr Lys Val
370

<210> 197
<211> 339
<212> PRT
<213> *Lolium perenne*

<400> 197

Met Ala Val Gln Lys His Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
20 25 30

Ala Thr Pro Ala Thr Pro Ala Ala Pro Ala Thr Ala Ala Thr Pro Ala
35 40 45

Thr Pro Ala Thr Pro Ala Thr Pro Ala Ala Val Pro Ser Gly Lys Ala
50 55 60

Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly Phe Lys
65 70 75 80

Ala Ala Val Ala Ala Ala Val Val Pro Pro Ala Asp Lys Tyr Lys
85 90 95

Thr Phe Val Glu Thr Phe Gly Thr Ala Thr Asn Lys Ala Phe Val Glu
100 105 110

Gly Leu Ala Ser Gly Tyr Ala Asp Gln Ser Lys Asn Gln Leu Thr Ser
115 120 125

Lys Leu Asp Ala Ala Leu Lys Leu Ala Tyr Glu Ala Ala Gln Gly Ala
130 135 140

Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Leu Thr Glu Ala
145 150 155 160

Leu Arg Val Ile Ala Gly Thr Leu Glu Val His Ala Val Lys Pro Ala
165 170 175

Ala Glu Glu Val Lys Val Gly Ala Ile Pro Ala Ala Glu Val Gln Leu
180 185 190

Ile Asp Lys Val Asp Ala Ala Tyr Arg Thr Ala Ala Thr Ala Ala Asn
195 200 205

Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Asn Thr Phe Asn
210 215 220

100H94~2.TXT

Asn Ala Ile Lys Val Ser Leu Gly Ala Ala Tyr Asp Ser Tyr Lys Phe
225 230 235 240

Ile Pro Thr Leu Val Ala Ala Val Lys Gln Ala Tyr Ala Ala Lys Gln
245 250 255

Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Ser Glu Thr Ala Leu Lys
260 265 270

Lys Ala Val Thr Ala Met Ser Glu Ala Glu Lys Glu Ala Thr Pro Ala
275 280 285

Ala Ala Ala Thr Ala Thr Pro Thr Pro Ala Ala Ala Thr Ala Thr Ala
290 295 300

Thr Pro Ala Ala Ala Tyr Ala Thr Ala Thr Pro Ala Ala Ala Thr Ala
305 310 315 320

Thr Ala Thr Pro Ala Ala Ala Thr Ala Thr Pro Ala Ala Ala Gly Gly
325 330 335

Tyr Lys Val

<210> 198

<211> 301

<212> PRT

<213> *Lolium perenne*

<400> 198

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Thr Pro
20 25 30

Ala Ala Ala Ala Thr Pro Ala Thr Pro Ala Ala Thr Pro Ala Ala Ala
35 40 45

Gly Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn
50 55 60

Ala Gly Phe Lys Ala Ala Val Ala Ala Ala Asn Ala Pro Pro Ala
65 70 75 80

Asp Lys Phe Lys Ile Phe Glu Ala Ala Phe Ser Glu Ser Ser Lys Gly
85 90 95

Leu Leu Ala Thr Ser Ala Ala Lys Ala Pro Gly Leu Ile Pro Lys Leu
100 105 110

100H94~2.TXT
Asp Thr Ala Tyr Asp Val Ala Tyr Lys Ala Ala Glu Gly Ala Thr Pro
115 120 125

Glu Ala Lys Tyr Asp Ala Phe Val Thr Ala Leu Thr Glu Ala Leu Arg
130 135 140

Val Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Ala Thr Glu
145 150 155 160

Glu Val Pro Ala Ala Lys Ile Pro Thr Gly Glu Leu Gln Ile Val Asp
165 170 175

Lys Ile Asp Ala Ala Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala
180 185 190

Pro Thr Asn Asp Lys Phe Thr Val Phe Glu Ser Ala Phe Asn Lys Ala
195 200 205

Leu Asn Glu Cys Thr Gly Gly Ala Tyr Glu Thr Tyr Lys Phe Ile Pro
210 215 220

Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala
225 230 235 240

Ala Pro Glu Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala
245 250 255

Ile Thr Ala Met Thr Gln Ala Gln Lys Ala Gly Lys Pro Ala Ala Ala
260 265 270

Ala Ala Thr Gly Ala Ala Thr Val Ala Thr Gly Ala Ala Thr Ala Ala
275 280 285

Ala Gly Ala Ala Thr Ala Ala Ala Gly Gly Tyr Lys Ala
290 295 300

<210> 199
<211> 301
<212> PRT
<213> Lolium perenne

<400> 199

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Asp Ser Tyr Ala Ala Asp Ala Gly Tyr Thr Pro
20 25 30

Ala Ala Ala Ala Thr Pro Ala Thr Pro Ala Ala Thr Pro Ala Ala Gly
35 40 45

Gly Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn
Page 161

50

55

100H94~2.TXT
60Ala Gly Phe Lys Ala Ala Val Ala Ala Asp Ala Asn Ala Pro Pro Ala
65 70 75 80Asp Lys Phe Lys Ile Phe Glu Ala Ala Phe Ser Glu Ser Cys Lys Gly
85 90 95Leu Leu Ala Thr Ser Asp Ala Lys Ala Pro Gly Leu Ile Leu Lys Leu
100 105 110Asp Thr Asp Tyr Asp Val Ala Tyr Lys Ala Gly Glu Gly Ala Thr Pro
115 120 125Glu Ala Lys Tyr Asp Ala Phe Val Thr Ala Leu Thr Glu Ala Leu Arg
130 135 140Val Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Ala Thr Glu
145 150 155 160Glu Val Pro Ala Ala Lys Ile Pro Thr Gly Glu Leu Gln Ile Val Asp
165 170 175Lys Ile Asp Ala Ala Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala
180 185 190Pro Thr Asn Asp Lys Phe Thr Val Phe Glu Ser Ala Phe Asn Lys Ala
195 200 205Leu Lys Glu Cys Thr Gly Gly Ala Tyr Glu Thr Tyr Lys Phe Ile Pro
210 215 220Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Thr Thr Val Ala Ala
225 230 235 240Ala Pro Glu Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala
245 250 255Ile Thr Ala Met Ser Gln Ala Gln Lys Val Ala Lys Pro Ala Ala Ala
260 265 270Ala Ala Thr Gly Ala Ala Thr Val Ala Thr Gly Ala Ala Thr Ala Ala
275 280 285Ala Gly Gly Ala Thr Ala Ala Gly Gly Tyr Lys Ala
290 295 300

<210> 200

<211> 290

<212> PRT

<213> Phleum pratense

100H94~2.TXT

<400> 200

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1 5 10 15Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
20 25 30Ala Thr Pro Ala Ala Ala Gly Ala Glu Ala Gly Lys Ala Thr Thr Glu
35 40 45Glu Gln Lys Leu Ile Glu Asp Ile Asn Val Gly Phe Lys Ala Ala Val
50 55 60Ala Ala Ala Ala Ser Val Pro Ala Ala Asp Lys Phe Lys Thr Phe Glu
65 70 75 80Ala Ala Phe Thr Ser Ser Lys Ala Ala Thr Ala Lys Ala Pro Gly
85 90 95Leu Val Pro Lys Leu Asp Ala Ala Tyr Ser Val Ala Tyr Lys Ala Ala
100 105 110Val Gly Ala Thr Pro Glu Ala Lys Phe Asp Ser Phe Val Ala Ser Leu
115 120 125Thr Glu Ala Leu Arg Val Ile Ala Gly Ala Leu Glu Val His Ala Val
130 135 140Lys Pro Val Thr Glu Asp Pro Ala Trp Pro Lys Ile Pro Ala Gly Glu
145 150 155 160Leu Gln Ile Ile Asp Lys Ile Asp Ala Ala Phe Lys Val Ala Ala Thr
165 170 175Ala Ala Ala Thr Ala Pro Ala Asp Asp Lys Phe Thr Val Phe Glu Ala
180 185 190Ala Phe Asn Lys Ala Ile Lys Glu Ser Thr Gly Gly Ala Tyr Asp Thr
195 200 205Tyr Lys Cys Ile Pro Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala
210 215 220Ala Thr Val Ala Ala Ala Pro Gln Val Lys Tyr Ala Val Phe Glu Ala
225 230 235 240Ala Leu Thr Lys Ala Ile Thr Ala Met Ser Glu Val Gln Lys Val Ser
245 250 255Gln Pro Ala Thr Gly Ala Ala Thr Val Ala Ala Gly Ala Ala Thr Thr
260 265 270

100H94~2.TXT

Ala Thr Gly Ala Ala Ser Gly Ala Ala Thr Val Ala Ala Gly Gly Tyr
275 280 285

Lys Val
290

<210> 201
<211> 264
<212> PRT
<213> Holcus lanatus

<400> 201

Ala Asp Ala Gly Tyr Thr Pro Ala Ala Pro Ala Ala Ala Gly Ala Gly
1 5 10 15

Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn Ala
20 25 30

Gly Phe Lys Thr Ala Val Ala Ala Ala Asn Val Pro Pro Ala Asp
35 40 45

Lys Tyr Lys Thr Phe Glu Ala Ala Phe Thr Ala Ser Ser Lys Ala Ser
50 55 60

Ile Ala Ala Ala Ala Thr Lys Ala Pro Gly Leu Ile Pro Gln Leu Asn
65 70 75 80

Ala Ala Thr Asn Thr Ala Tyr Ala Ala Ala Gln Gly Ala Thr Pro Glu
85 90 95

Ala Lys Tyr Asp Ala Phe Val Thr Thr Leu Thr Glu Ala Leu Arg Val
100 105 110

Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Ala Thr Glu Glu
115 120 125

Val Gly Ala Ala Lys Ile Pro Ala Gly Glu Leu Gln Ile Val Asp Lys
130 135 140

Ile Asp Ala Ala Phe Arg Ile Ala Ala Thr Ala Ala Asn Ala Ala Pro
145 150 155 160

Val Asn Asp Lys Phe Thr Val Phe Glu Gly Ala Phe Asn Lys Ala Ile
165 170 175

Lys Glu Ser Thr Gly Gly Ala Tyr Glu Ala Tyr Lys Phe Ile Pro Ser
180 185 190

Leu Glu Thr Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala
195 200 205

100H94~2.TXT

Pro Glu Val Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile
210 215 220

Thr Ala Met Ser Glu Ala Gln Lys Glu Ala Lys Pro Val Ala Ala Ala
225 230 235 240

Thr Gly Ala Ala Thr Ala Ala Ala Gly Val Ala Ala Gly Ala Ala Thr
245 250 255

Ala Ala Ala Gly Gly Tyr Lys Val
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<210> 202

<211> 287

<212> PRT

<213> Phleum pratense

<400> 202

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
20 25 30

Ala Thr Pro Ala Ala Ala Gly Ala Glu Ala Gly Lys Ala Thr Thr Glu
35 40 45

Glu Gln Lys Leu Ile Glu Asp Ile Asn Val Gly Phe Lys Ala Ala Val
50 55 60

Ala Ala Ala Ala Ser Val Pro Ala Ala Asp Lys Phe Lys Thr Phe Glu
65 70 75 80

Ala Ala Phe Thr Ser Ser Lys Ala Ala Thr Ala Lys Ala Pro Gly
85 90 95

Leu Val Pro Lys Leu Asp Ala Ala Tyr Ser Val Ser Tyr Lys Ala Ala
100 105 110

Val Gly Ala Thr Pro Glu Ala Lys Phe Asp Ser Phe Val Ala Ser Leu
115 120 125

Thr Glu Ala Leu Arg Val Ile Ala Gly Ala Leu Glu Val His Ala Val
130 135 140

Lys Pro Val Thr Glu Glu Pro Gly Met Ala Lys Ile Pro Ala Gly Glu
145 150 155 160

Leu Gln Ile Ile Asp Lys Ile Asp Ala Ala Phe Lys Val Ala Ala Thr
165 170 175

Ala Ala Ala Thr Ala Pro Ala Asp Thr Val Phe Glu Ala Ala Phe Asn
 180 185 190

Lys Ala Ile Lys Glu Ser Thr Gly Gly Ala Tyr Asp Thr Tyr Lys Cys
 195 200 205

Ile Pro Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val
 210 215 220

Ala Ala Ala Pro Gln Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr
 225 230 235 240

Lys Ala Ile Thr Ala Met Ser Glu Val Gln Lys Val Ser Gln Pro Ala
 245 250 255

Thr Gly Ala Ala Thr Val Ala Ala Gly Ala Ala Thr Thr Ala Ala Gly
 260 265 270

Ala Ala Ser Gly Ala Ala Thr Val Ala Ala Gly Gly Tyr Lys Val
 275 280 285

<210> 203

<211> 296

<212> PRT

<213> Holcus lanatus

<400> 203

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Thr Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
 20 25 30

Thr Thr Pro Ala Ala Ala Gly Ala Ala Ala Gly Lys Ile Thr Pro Thr
 35 40 45

Gln Glu Gln Lys Leu Met Glu Asp Ile Asn Val Gly Phe Lys Ala Ala
 50 55 60

Val Ala Ala Ala Ala Gly Ala Pro Pro Ala Asp Lys Phe Lys Thr Phe
 65 70 75 80

Gln Ala Ala Phe Ser Ala Ser Val Glu Ala Ser Ala Ala Lys Leu Asn
 85 90 95

Ala Ala Gln Ala Pro Gly Phe Val Ser His Val Ala Ala Thr Ser Asp
 100 105 110

Ala Thr Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe Asp
 115 120 125

Ser Phe Val Ala Ala Phe Thr Glu Ala Leu Arg Val Ile Ala Gly Val
 Page 166

130

135

140

Leu Lys Val His Ala Val Lys Pro Ile Thr Glu Glu Ile Gly Ala Ala
 145 150 155 160

Lys Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys Ile Asp Ala Ala
 165 170 175

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
 180 185 190

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Glu Ser Thr
 195 200 205

Gly Gly Ala Tyr Asp Thr Tyr Lys Ser Ile Pro Ser Leu Glu Ala Ala
 210 215 220

Val Lys Gln Ala Tyr Ala Ala Thr Ile Ala Ala Pro Glu Val Lys
 225 230 235 240

Phe Ala Val Phe Lys Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Ala
 245 250 255

Glu Val Gln Lys Val Ser Lys Pro Val Ala Gly Ala Ala Thr Ala Ala
 260 265 270

Thr Gly Ala Ala Thr Gly Ala Ala Gly Ala Ala Thr Gly Ala Ala Thr
 275 280 285

Val Ser Ala Gly Gly Tyr Lys Val
 290 295

<210> 204
 <211> 303
 <212> PRT
 <213> Poa pratensis

<400> 204

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Thr Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
 20 25 30

Ala Thr Pro Ala Ala Ala Gly Ala Ala Ala Gly Lys Ile Thr Pro Thr
 35 40 45

Gln Glu Gln Lys Leu Met Glu Asp Ile Asn Val Gly Phe Lys Ala Ala
 50 55 60

Val Ala Ala Ala Ala Gly Ala Pro Pro Ala Asp Lys Phe Lys Thr Phe
 65 70 75 80

100H94~2.TXT

Gln Ala Ala Phe Ser Ala Ser Val Glu Ala Ser Ala Ala Lys Leu Asn
85 90 95

Ala Ala Gln Ala Pro Gly Phe Val Ser His Val Ala Ala Thr Ser Asp
100 105 110

Ala Thr Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe Asp
115 120 125

Ser Phe Val Ala Ala Phe Thr Glu Ala Leu Arg Ile Ile Ala Gly Val
130 135 140

Leu Lys Val His Ala Val Lys Pro Ile Thr Glu Glu Thr Gly Ala Ala
145 150 155 160

Lys Ile Pro Ala Gly Glu Gln Ile Ile Asp Lys Ile Asp Ala Ala
165 170 175

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
180 185 190

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Glu Ser Thr
195 200 205

Gly Gly Ala Tyr Asp Thr Tyr Lys Ser Ile Pro Ser Leu Glu Ala Ala
210 215 220

Val Lys Gln Ala Tyr Ala Ala Thr Ile Ala Ala Ala Pro Glu Val Lys
225 230 235 240

Phe Ala Val Phe Lys Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Ala
245 250 255

Glu Val Gln Lys Val Ser Lys Pro Val Ala Gly Ala Ala Thr Val Ala
260 265 270

Ala Gly Ala Ala Thr Ala Ala Thr Gly Ala Ala Thr Gly Ala Ala Gly
275 280 285

Ala Ala Thr Gly Ala Ala Thr Val Ser Ala Gly Gly Tyr Lys Val
290 295 300

<210> 205
<211> 295
<212> PRT
<213> Phleum pratense

<400> 205

Ser Val Lys Arg Ser Asn Gly Ser Ala Glu Val His Arg Gly Ala Val
1 5 10 15

100H94~2.TXT

Pro Arg Arg Gly Pro Arg Gly Gly Pro Gly Arg Ser Tyr Ala Ala Asp
20 25 30

Ala Gly Tyr Ala Pro Ala Thr Pro Ala Ala Ala Gly Ala Glu Ala Gly
35 40 45

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Asp Ile Asn Val Gly
50 55 60

Phe Lys Ala Ala Val Ala Ala Ala Ser Val Pro Ala Ala Asp Lys
65 70 75 80

Phe Lys Thr Phe Glu Ala Ala Phe Thr Ser Ser Ser Lys Ala Ala Thr
85 90 95

Ala Lys Ala Pro Gly Leu Val Pro Lys Leu Asp Ala Ala Tyr Ser Val
100 105 110

Ala Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe Asp Ser
115 120 125

Phe Val Ala Ser Leu Thr Glu Ala Leu Arg Val Ile Ala Gly Ala Leu
130 135 140

Glu Val His Ala Val Lys Pro Val Thr Glu Glu Pro Gly Met Ala Lys
145 150 155 160

Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys Ile Asp Ala Ala Phe
165 170 175

Lys Val Ala Ala Thr Ala Ala Ala Thr Ala Pro Ala Asp Asp Lys Phe
180 185 190

Thr Val Phe Glu Ala Ala Phe Asn Lys Ala Ile Lys Glu Ser Thr Gly
195 200 205

Gly Ala Tyr Asp Thr Tyr Lys Cys Ile Pro Ser Leu Glu Ala Ala Val
210 215 220

Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala Pro Gln Val Lys Tyr
225 230 235 240

Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Ser Glu
245 250 255

Val Gln Lys Val Ser Gln Pro Ala Thr Gly Ala Ala Thr Val Ala Ala
260 265 270

Gly Ala Ala Thr Thr Ala Ala Gly Ala Ala Ser Gly Ala Ala Thr Val
275 280 285

Ala Ala Gly Gly Tyr Lys Val
290 295

<210> 206
<211> 281
<212> PRT
<213> Phleum pratense

<400> 206

Ala Val Pro Arg Arg Gly Pro Arg Gly Gly Pro Gly Arg Ser Tyr Ala
1 5 10 15

Ala Asp Ala Gly Tyr Ala Pro Ala Thr Pro Ala Ala Ala Gly Ala Glu
20 25 30

Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Asp Ile Asn
35 40 45

Val Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Ser Val Pro Ala Gly
50 55 60

Asp Lys Phe Lys Thr Phe Glu Ala Ala Phe Thr Ser Ser Ser Lys Ala
65 70 75 80

Ala Thr Ala Lys Ala Pro Gly Leu Val Pro Lys Leu Asp Ala Ala Tyr
85 90 95

Ser Val Ala Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe
100 105 110

Asp Ser Phe Val Ala Ser Leu Thr Glu Ala Leu Arg Val Ile Ala Gly
115 120 125

Ala Leu Glu Val His Ala Val Lys Pro Val Thr Glu Glu Pro Gly Met
130 135 140

Ala Lys Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys Ile Asp Ala
145 150 155 160

Ala Phe Lys Val Ala Ala Thr Ala Ala Ala Thr Ala Pro Ala Asp Asp
165 170 175

Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Lys Ala Ile Lys Glu Ser
180 185 190

Thr Gly Gly Ala Tyr Asp Thr Tyr Lys Cys Ile Pro Ser Leu Glu Ala
195 200 205

Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala Pro Gln Val
210 215 220

100H94~2.TXT
Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met
225 230 235 240

Ser Glu Val Gln Lys Val Ser Gln Pro Ala Thr Gly Ala Ala Thr Val
245 250 255

Ala Ala Gly Ala Ala Thr Thr Ala Thr Gly Ala Ala Ser Gly Ala Ala
260 265 270

Thr Val Ala Ala Gly Gly Tyr Lys Val
275 280

<210> 207
<211> 284
<212> PRT
<213> Phleum pratense

<400> 207

Ala Ala Ala Ala Val Pro Arg Arg Gly Pro Arg Gly Gly Pro Gly Arg
1 5 10 15

Ser Tyr Thr Ala Asp Ala Gly Tyr Ala Pro Ala Thr Pro Ala Ala Ala
20 25 30

Gly Ala Ala Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
35 40 45

Asp Ile Asn Val Gly Phe Lys Ala Ala Val Ala Ala Ala Ser Val
50 55 60

Pro Ala Ala Asp Lys Phe Lys Thr Phe Glu Ala Ala Phe Thr Ser Ser
65 70 75 80

Ser Lys Ala Ala Ala Lys Ala Pro Gly Leu Val Pro Lys Leu Asp
85 90 95

Ala Ala Tyr Ser Val Ala Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu
100 105 110

Ala Lys Phe Asp Ser Phe Val Ala Ser Leu Thr Glu Ala Leu Arg Val
115 120 125

Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Val Thr Glu Glu
130 135 140

Pro Gly Met Ala Lys Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys
145 150 155 160

Ile Asp Ala Ala Phe Lys Val Ala Ala Thr Ala Ala Ala Thr Ala Pro
165 170 175

Ala Asp Asp Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Lys Ala Ile
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180

185

190

Lys Glu Ser Thr Gly Gly Ala Tyr Asp Thr Tyr Lys Cys Ile Pro Ser
 195 200 205

Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala
 210 215 220

Pro Gln Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile
 225 230 235 240

Thr Ala Met Ser Glu Val Gln Lys Val Ser Gln Pro Ala Thr Gly Ala
 245 250 255

Ala Thr Val Ala Ala Gly Ala Ala Thr Thr Ala Ala Gly Ala Ala Ser
 260 265 270

Gly Ala Ala Thr Val Ala Ala Gly Gly Tyr Lys Val
 275 280

<210> 208

<211> 266

<212> PRT

<213> Phleum pratense

<400> 208

Ala Asp Ala Gly Tyr Ala Pro Ala Thr Pro Ala Ala Ala Gly Ala Glu
 1 5 10 15

Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Asp Ile Asn
 20 25 30

Val Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Ser Val Pro Ala Ala
 35 40 45

Asp Lys Phe Lys Thr Phe Glu Ala Ala Phe Thr Ser Ser Ser Lys Ala
 50 55 60

Ala Thr Ala Lys Ala Pro Gly Leu Val Pro Lys Leu Asp Ala Ala Tyr
 65 70 75 80

Ser Val Ala Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe
 85 90 95

Asp Ser Phe Val Ala Ser Leu Thr Glu Ala Leu Arg Val Ile Ala Gly
 100 105 110

Ala Leu Glu Val His Ala Val Lys Pro Val Thr Glu Glu Pro Gly Met
 115 120 125

Ala Lys Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys Ile Asp Ala
 130 135 140

100H94~2.TXT

Ala Phe Lys Val Ala Ala Thr Ala Ala Ala Thr Ala Pro Ala Asp Asp
145 150 155 160

Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Lys Ala Ile Lys Glu Ser
165 170 175

Thr Gly Gly Ala Tyr Asp Thr Tyr Lys Cys Ile Pro Ser Leu Glu Ala
180 185 190

Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala Pro Gln Val
195 200 205

Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met
210 215 220

Ser Glu Val Gln Lys Val Ser Gln Pro Ala Thr Gly Ala Ala Thr Val
225 230 235 240

Ala Ala Gly Ala Ala Thr Gly Thr Ala Ala Gly Ala Ala Ser Gly Ala
245 250 255

Ala Thr Val Ala Ala Gly Gly Tyr Lys Val
260 265

<210> 209
<211> 240
<212> PRT
<213> Phleum pratense

<400> 209

Gln Lys Leu Leu Glu Asp Val Asn Ala Ser Phe Lys Ala Ala Val Ala
1 5 10 15

Ala Ala Ala Lys Val Pro Pro Ala Asp Lys Tyr Lys Thr Phe Leu Arg
20 25 30

Ala Phe Thr Val Leu Asp Arg Gly Ser Thr Glu Gln Ser Lys Ala Glu
35 40 45

Glu Thr Lys Met Pro Glu Leu Ser Ser Lys Leu Val Asp Ala Tyr Met
50 55 60

Ala Ala Phe Lys Ala Ser Thr Gly Gly Thr Gln Glu Ala Lys Tyr Asp
65 70 75 80

Ala Phe Val Thr Thr Leu Thr Glu Ala Leu Arg Val Ile Ala Gly Ala
85 90 95

Leu Glu Val His Ala Val Lys Pro Ala Thr Glu Glu Val Pro Ala Ala
100 105 110

100H94~2.TXT

Lys Ile Pro Ala Gly Asp Leu Gln Val Val Asp Lys Ile Asp Ala Ser
115 120 125

Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
130 135 140

Phe Thr Val Phe Glu Thr Ala Phe Asn Lys Ala Leu Lys Glu Ser Thr
145 150 155 160

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ser Leu Glu Ala Ala
165 170 175

Val Lys Gln Ala Tyr Ala Ser Thr Val Ala Ala Ala Pro Glu Val Lys
180 185 190

Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Ser
195 200 205

Gln Ala Gln Lys Val Ala Gln Pro Ala Ala Ala Ala Thr Gly Ala Ala
210 215 220

Thr Val Ala Ala Gly Ala Ala Thr Thr Ala Ala Gly Gly Tyr Lys Val
225 230 235 240

<210> 210

<211> 294

<212> PRT

<213> Phalaris aquatica

<400> 210

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Met Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Thr Pro Pro
20 25 30

Thr Pro Ala Thr Pro Ala Val Pro Gly Ala Ala Ala Gly Lys Ala Thr
35 40 45

Thr His Glu Gln Lys Leu Ile Glu Asp Ile Asn Ala Ala Phe Lys Trp
50 55 60

Trp Pro Ala Ser Ala Pro Pro Ala Asp Lys Tyr Lys Thr Phe Glu Thr
65 70 75 80

Ala Phe Ser Lys Ala Asn Ile Ala Gly Ala Ser Thr Lys Gly Leu Asp
85 90 95

Ala Ala Tyr Ser Val Val Tyr Asn Thr Ala Ala Gly Ala Thr Pro Glu
100 105 110

100H94~2.TXT
Ala Lys Tyr Asp Ser Phe Val Thr Ala Leu Thr Glu Ala Leu Arg Ile
115 120 125

Met Ala Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Thr Glu Glu
130 135 140

Glu Val Pro Ser Ala Lys Ile Leu Arg Ala Asn Ser Arg Ser Ser Thr
145 150 155 160

Arg Ser Ser Arg Phe Lys Ile Ala Ala Thr Val Ala Thr Pro Leu Ser
165 170 175

His Ser Thr Ala Ala Asn Ser Ala Pro Ala Asn Asp Lys Phe Thr Val
180 185 190

Phe Glu Gly Ala Phe Asn Lys Ala Ile Lys Glu Arg His Gly Gly Pro
195 200 205

Thr Glu Thr Tyr Lys Phe Ile Pro Ser Leu Glu Ala Ala Val Lys Gln
210 215 220

Ala Tyr Gly Ala Thr Val Ala Arg Ala Pro Glu Val Lys Tyr Ala Val
225 230 235 240

Phe Glu Ala Gly Leu Thr Lys Ala Ile Thr Ala Met Ser Glu Ala Gln
245 250 255

Lys Val Ala Lys Pro Val Arg Leu Ser Pro Gln Pro Pro Gln Val Leu
260 265 270

Pro Leu Ala Ala Gly Gly Ala Ala Thr Val Ala Ala Ala Ser Asp Ser
275 280 285

Arg Gly Gly Tyr Lys Val
290

<210> 211
<211> 320
<212> PRT
<213> Phalaris aquatica

<400> 211

Met Ala Val Gln Lys Tyr Thr Met Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Ala Pro Thr Pro Pro Thr Pro Arg Thr Pro Pro
20 25 30

Leu Leu Pro Pro Pro Arg Ala Arg Asp Lys Ala Thr Leu Thr Ser Arg
35 40 45

Ser Val Glu Asp Ile Asn Ala Ala Ser Arg Arg Pro Trp Trp Ala Ser

50

55

60

Val Pro Pro Ala Asp Lys Phe Lys Thr Phe Ala Asp His Val Leu Cys
 65 70 75 80

Val Pro Asn Ala Asp Val Thr Ser Ala Ala Thr Lys Ala Pro Gln Leu
 85 90 95

Lys Ala Lys Leu Asp Ala Ala Tyr Arg Val Ala Tyr Glu Ala Ala Glu
 100 105 110

Gly Ser Thr Pro Glu Ala Lys Tyr Asp Ala Phe Ile Ala Ala Leu Thr
 115 120 125

Glu Ala Leu Arg Val Ile Ala Gly Ala Phe Glu Val His Ala Val Lys
 130 135 140

Pro Ala Thr Glu Glu Val Val Ala Asp Pro Val Gly Glu Leu Gln Ile
 145 150 155 160

Val Asp Lys Ile Asp Ala Ala Phe Lys Ile Ala Ala Thr Ala Ala Asn
 165 170 175

Ser Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Gly Ala Phe Asn
 180 185 190

Lys Ala Ile Lys Glu Ser Thr Ala Gly Ala Tyr Glu Thr Tyr Lys Phe
 195 200 205

Ile Pro Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Gly Ala Thr Val
 210 215 220

Ala Arg Ala Pro Glu Val Lys Tyr Ala Val Phe Glu Ala Gly Leu Thr
 225 230 235 240

Lys Ala Ile Thr Ala Met Ser Glu Ala Gln Lys Val Ala Lys Pro Pro
 245 250 255

Leu Ser Pro Gln Pro Pro Gln Val Leu Pro Leu Ala Ala Gly Gly Ala
 260 265 270

Ala Thr Val Ala Ala Ala Ser Asp Val Arg Val Cys Arg Ser His Gly
 275 280 285

Thr Leu Gln Asp Ala Cys Leu Leu Arg Cys Arg Gly Gly Cys Gln Pro
 290 295 300

Val Val Trp Arg Gly Gly Ser His Arg Ala Arg Gly Gly Tyr Lys Val
 305 310 315 320

100H94~2.TXT

<211> 313

<212> PRT

<213> Hordeum vulgare

<400> 212

Met Ala Asn Ser Gly Arg Glu His Ser Ala Val Pro Arg Arg Arg Asn
 1 5 10 15

Leu Val Ala Leu Val Pro Arg His Gly Cys Tyr Ala Glu Phe Ser Leu
 20 25 30

Tyr Val Cys Val Gly Asn Ile Asn Ala Pro Phe Pro Val Phe Asn Arg
 35 40 45

Thr Thr Phe Ile Ala Asn Ala Gly Ile Glu Ala Glu Leu Glu Pro His
 50 55 60

Phe Leu Leu Leu Leu Phe Thr Phe Ser Ser Ser Ser Phe Phe Thr
 65 70 75 80

Leu Leu Lys Thr Met Ile His Phe Thr Asp Arg Ser Asp Asn Lys Asn
 85 90 95

Lys Ala Met Met Arg Gly Arg Glu Phe Arg Lys Ala Phe Ala Glu Val
 100 105 110

Leu Lys Gly Ala Ala Thr Gly Gln Ile Ala Gly Gln Ser Ser Ser Met
 115 120 125

Ala Lys Leu Ser Ser Ser Leu Glu Leu Ser Tyr Lys Leu Ala Tyr Asp
 130 135 140

Lys Ala Gln Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala
 145 150 155 160

Thr Leu Thr Glu Ser Leu Arg Val Ile Ser Gly Thr Leu Glu Val His
 165 170 175

Ser Val Lys Pro Ala Ala Glu Glu Val Lys Gly Val Pro Ala Gly Glu
 180 185 190

Leu Lys Ala Ile Asp Gln Val Asp Ala Ala Phe Arg Thr Ala Ala Thr
 195 200 205

Ala Ala Asp Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Ser
 210 215 220

Leu Gln Gln Gly Pro Ser Arg Lys Pro Arg Gly Gly Ala Tyr Glu Ser
 225 230 235 240

Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala
 245 250 255

100H94~2.TXT

Ala Thr Val Ala Ala Ala Pro Glu Val Lys Phe Thr Val Phe Gln Thr
260 265 270

Ala Leu Ser Lys Ala Ile Asn Ala Met Thr Gln Ala Gln Lys Val Ala
275 280 285

Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Val Ala Ala Gly Ala
290 295 300

Ala Ala Thr Ala Gly Asn Tyr Lys Val
305 310

<210> 213

<211> 179

<212> PRT

<213> Hordeum vulgare

<400> 213

Leu Glu Leu Ser Tyr Lys Leu Ala Tyr Asp Lys Ala Gln Gly Ala Thr
1 5 10 15

Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Leu Thr Glu Ser Leu
20 25 30

Arg Val Ile Ser Gly Thr Leu Glu Val His Ser Val Lys Pro Ala Ala
35 40 45

Glu Glu Val Lys Gly Val Pro Ala Gly Glu Leu Lys Ala Ile Asp Gln
50 55 60

Val Asp Ala Ala Phe Arg Thr Ala Ala Thr Ala Ala Asp Ala Ala Pro
65 70 75 80

Ala Asn Asp Lys Phe Thr Val Phe Glu Ser Leu Gln Gln Gly Pro Ser
85 90 95

Arg Lys Pro Arg Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala
100 105 110

Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala
115 120 125

Pro Glu Val Lys Phe Thr Val Phe Gln Thr Ala Leu Ser Lys Ala Ile
130 135 140

Asn Ala Met Thr Gln Ala Gln Lys Val Ala Lys Pro Ala Ala Ala Ala
145 150 155 160

Thr Ala Thr Ala Thr Val Ala Ala Gly Ala Ala Ala Thr Ala Gly Asn
165 170 175

Tyr Lys Val

<210> 214
 <211> 210
 <212> PRT
 <213> *Vespula vulgaris*

<220>
 <221> MISC_FEATURE
 <222> (1)..(210)
 <223> where Xaa is any amino acid

<400> 214

Xaa Xaa Glu Ala Glu Phe Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys
 1 5 10 15

Gly Gly Val His Thr Ala Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys
 20 25 30

Gly Asn Lys Val Val Val Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln
 35 40 45

Asp Ile Leu Lys Glu His Asn Asp Phe Arg Gln Lys Ile Ala Arg Gly
 50 55 60

Leu Glu Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys Asn Met
 65 70 75 80

Lys Asn Leu Val Trp Asn Asp Glu Leu Ala Tyr Val Ala Gln Val Trp
 85 90 95

Ala Asn Gln Cys Gln Tyr Gly His Asp Thr Cys Arg Asp Val Ala Lys
 100 105 110

Tyr Gln Val Gly Gln Asn Val Ala Leu Thr Gly Ser Thr Ala Ala Lys
 115 120 125

Tyr Asp Asp Pro Val Lys Leu Val Lys Met Trp Glu Asp Glu Val Lys
 130 135 140

Asp Tyr Asn Pro Lys Lys Phe Ser Gly Asn Asp Phe Leu Lys Thr
 145 150 155 160

Gly His Tyr Thr Gln Met Val Trp Ala Asn Thr Lys Glu Val Gly Cys
 165 170 175

Gly Ser Ile Lys Tyr Ile Gln Glu Lys Trp His Lys His Tyr Leu Val
 180 185 190

Cys Asn Tyr Gly Pro Ser Gly Asn Phe Lys Asn Glu Glu Leu Tyr Gln
 195 200 205

100H94~2.TXT

Thr Lys
210

<210> 215
<211> 38
<212> DNA
<213> Artificial sequence

<220>
<223> oligonucleotide primer

<220>
<221> CDS
<222> (4)..(36)

<400> 215
ccg ctc gag aaa aga aac aat tat tgt aaa ata aaa tg
Leu Glu Lys Arg Asn Asn Tyr Cys Lys Ile Lys
1 5 10

38

<210> 216
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> oligonucleotide primer

<400> 216

Leu Glu Lys Arg Asn Asn Tyr Cys Lys Ile Lys
1 5 10

<210> 217
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> Kex2 cleavage site

<400> 217

Glu Ala Glu Ala Glu Phe
1 5

<210> 218
<211> 387
<212> DNA
<213> Dermatophagoides pteronyssinus

<220>
<221> CDS
<222> (1)..(387)

<220>
<221> mutation
<222> (16)..(18)

<220>
<221> mutation
<222> (43)..(45)

100H94~2.TXT

<220>
 <221> mutation
 <222> (88)..(90)

<220>
 <221> mutation
 <222> (184)..(186)

<220>
 <221> mutation
 <222> (220)..(222)

<220>
 <221> mutation
 <222> (244)..(246)

<400> 218

gat	caa	gtc	gat	gtc	gcc	gat	tgt	gcc	aac	cat	gaa	atc	aaa	gaa	gtt	48
Asp	Gln	Val	Asp	Val	Ala	Asp	Cys	Ala	Asn	His	Glu	Ile	Lys	Glu	Val	
1									5		10			15		

ttg gta cca gga tgt cat ggt tca gaa cca tgt atc att aac cgt ggt

Leu	Val	Pro	Gly	Cys	His	Gly	Ser	Glu	Pro	Cys	Ile	Ile	Asn	Arg	Gly	96
									20		25			30		

aaa cca ttc caa ttg gaa gcc gtt ttc gaa gcc aac caa aac aca aaa

Lys	Pro	Phe	Gln	Leu	Glu	Ala	Val	Phe	Glu	Ala	Asn	Gln	Asn	Thr	Lys	144
									35		40			45		

acc gct aaa att gaa atc aaa gcc tca atc gat ggt tta tca gtt gat

Thr	Ala	Lys	Ile	Glu	Ile	Lys	Ala	Ser	Ile	Asp	Gly	Leu	Ser	Val	Asp	192
									50		55			60		

gtt ccc ggt atc gat cca aat gca tgc aat tac atg aaa tgc cca ttg

Val	Pro	Gly	Ile	Asp	Pro	Asn	Ala	Cys	Asn	Tyr	Met	Lys	Cys	Pro	Leu	240
									65		70			75		

gtt aat gga caa caa tat gat att aaa tat aca tgg aat gtt ccg aaa

Val	Asn	Gly	Gln	Gln	Tyr	Asp	Ile	Lys	Tyr	Thr	Trp	Asn	Val	Pro	Lys	288
									85		90			95		

att gca cca aaa tct gaa aat gtt gtc gtc act gtt aaa gtt atg ggt

Ile	Ala	Pro	Lys	Ser	Glu	Asn	Val	Val	Val	Thr	Val	Lys	Val	Met	Gly	336
									100		105			110		

gat gat ggt gtt ttg gcc tgt gct att gca act cat gct aaa atc cgc

Asp	Asp	Gly	Val	Leu	Ala	Cys	Ala	Ile	Ala	Thr	His	Ala	Lys	Ile	Arg	384
									115		120			125		

gat

Asp

387

<210> 219
 <211> 129
 <212> PRT
 <213> Dermatophagoides pteronyssinus

<400> 219

Asp	Gln	Val	Asp	Val	Ala	Asp	Cys	Ala	Asn	His	Glu	Ile	Lys	Glu	Val
1											5			10	

Leu	Val	Pro	Gly	Cys	His	Gly	Ser	Glu	Pro	Cys	Ile	Ile	Asn	Arg	Gly
									20		25			30	

100H94~2.TXT

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
100 105 110

Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp